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LIVESTOCK DEVELOPMENT IN NIGERIA

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The subject of this article is the development of the livestock industry in Nigeria, with special reference to the economic importance of its resources to the Empire.

A very great deal of attention has within recent years been given to the development of the agricultural resources of our African Colonies, but very little so far to the equally important subject of livestock development and the commercial exploitation of livestock products.

The livestock population of the African Colonies numbers at least 40 million cattle and four times as many sheep and goats. These figures are approximate, for it is impossible to obtain an accurate census of the stock in these Colonies as the African native has a strong superstitious aversion to counting his cattle. Other reasons as well, not remotely associated with tax assessment, make an accurate count of the natives' herds and flocks almost an impossibility.

In Nigeria alone, there are at least 5 million cattle, 10 million goats, 3 million sheep, and the resources of these vast herds and flocks, which are at present of considerable economic value, are capable of further expansion.

The subject of livestock development in the Colonies cannot be discussed without first describing the work of the Colonial Veterinary Service in controlling and suppressing the serious cattle epizoötics which not very many years ago used to sweep the country in periodic waves, decimating the herds and leaving behind a trail of misery and economic ruin.

The main disease in this connection was, and in some territories still is, rinderpest, a highly contagious and very fatal disease of cattle. Some wild game, for example eland, buffalo, wart hog, and giraffe, are susceptible to the disease, and often cause its spread over wide areas and add to the difficulties of its control.

Although the disease had appeared earlier in East Africa it did not reach Nigeria until about 1889 when it swept through the herds of Eastern Bornu like a fire, killing hundreds of thousands of cattle. In some cases whole herds were wiped out and in others only remnants were left, from which the natives had to commence the slow process of rebuilding their herds, while all the time living in constant dread of the next visitation of the disease.

Under these conditions livestock development was impossible, and owners who formerly were proud of their fine herds of selected cattle were now only too glad to breed from any type of animal.

Such was the position in Nigeria in 1914 when the Veterinary Department was first formed. It was not, however, until some years later when a veterinary laboratory was built and additional staff provided that it was possible for the department to take any effective steps to suppress the disease.

The vastness of the grazing areas, the nomadic habits of the cattle-owning tribes, who with their herds travel long distances in the dry season in search of grazing and water, and the difficulties of transport, all added to the problem of disease control by making it impossible to deal promptly with each individual outbreak of the disease. The only practical method of control was that of immunisation on as large a scale as possible ahead of the disease. The policy of disease control by immunisation has been in active operation in Nigeria since 1925. The method of immunisation against rinderpest practised in Nigeria is the subcutaneous injection of a dose of virulent blood, which sets up the disease, and simultaneously an injection of anti-rinderpest hyper-immune serum, the dose of serum in each case depending on the age and size of the animal.

The result of this double inoculation is that the animal develops a mild attack of the disease from which if the dose of serum is correct and there are no inter-current infections, an average of 97 per cent. of animals recover. With animals over one year of age, the immunity set up is lifelong. We have only to compare these results with the effects of a natural attack of the disease when the mortality may be 97 per cent. to appreciate the benefits of immunisation. Cattle owners, only too well aware of the results of a natural attack of the disease, are now anxious to get their cattle artificially immunised. They pay periodic visits to one or other of the many veterinary immunisation camps which are now established throughout the country, where the cattle receive the inoculation and are quarantined for one month, while they are reacting to the inoculation.

Some 450,000 cattle are immunised against rinderpest every year. It is estimated that at the present time about 75 per cent. to 80 per cent. of the cattle population of the country are immune, and this large buffer of immune cattle is an effective safeguard against future outbreaks assuming epizoötic proportions. Instead of the wide-sweeping epizoötics of former days any outbreaks that occur are only local in extent and result in a small mortality.

It is a great pity that concerted action to suppress

this most devastating disease cannot be taken in all the territories of Africa where it still exists. Its presence in one territory is a constant danger to all other territories and necessitates the continuance of the present large scale and costly scheme of prophylactic immunisation. If the disease could be completely eradicated from Africa a lasting benefit of incalculable economic worth would be conferred on the livestock industry. But without concerted action each territory must continue to work independently and unceasingly to preserve its herds from destruction.

This disease alone is costing Africa many millions of pounds a year and its complete eradication from the Continent is work of international importance which should receive the earnest attention of all Governments concerned.

The other serious animal epizoötics of Nigeria are also being dealt with by prophylactic immunisation and each year very large numbers of animals are immunised. In 1938 alone, which is the last year for which figures are available, 551,000 cattle received vaccination against black-quarter, 195,550 against contagious pleuro-pneumonia, 11,000 against anthrax and 29,500 against haemorrhagic septicaemia. In addition to these vaccinations, some 11,000 cattle received curative treatment for trypanosomiasis.

All the anti-rinderpest serum and the various vaccines required for these immunisations are manufactured in Nigeria at the veterinary laboratory by the pathologist and his staff of European and African assistants.

I have given but a very sketchy account of the work being carried out to control animal diseases by the Veterinary Department in Nigeria. The same good work is going on in all our African Colonies where livestock play any appreciable part in the social and economic life of the community.

Without a definite policy of disease control no schemes of livestock development or indeed agricultural development requiring the use of cattle are possible. The control of disease is the primary essential in all schemes of livestock development in the Colonies. The economic value of the livestock industry to a Colony is dependent on the degree in which its various products can be utilised not only for local consumption but for export overseas. True it is that the livestock industry of Nigeria contributes between £300,000 and £400,000 a year to Government revenue in the form of tax, but the ability of the native to pay this tax is again dependent upon the value of the products of his livestock. The chief marketable products are meat, which includes livestock, milk and butter, and hides and skins and wool. Others of less importance are horns and hoofs, bones, gut casings for sausages and surgical ligatures, gland products and hair.

Before going on to describe the industries in meat, milk and butter, and hides and skins, a short account of the cattle of Nigeria is given.

Nigeria has no European settlers and all the livestock are native owned. The livestock population numbers roughly 5,000,000 cattle, 10,000,000 goats and about 3,000,000 sheep. The cattle are mainly of the zebu or humped type, but there are several variations to be found in different parts of the country. The predominant variety is what is known locally as the "White Fulani." As the name implies, these animals are white in colour and owned mainly by the Fulani tribe. The cows are not, as a rule, good milkers although under favourable conditions of keep, as for instance at the Agricultural and Veterinary Stock Farms, some cows may give up to two gallons of milk a day, and in individual instances even more. But the average milk yield under native-owned conditions is about half a gallon a day.

The White Fulani make very good butcher animals and large bulls when specially fattened may weigh up to 1,200 lb. The average animals, however, on natural grazing and especially towards the latter part of the long dry season when grazing is scarce and of poor quality, may weigh only 750 lb. to 800 lb. and some even less. More will be said later on this point when the meat industry and the fuller utilisation of these slaughter animals are discussed.

These humped cattle are confined almost entirely to the grazing areas of the Northern Provinces. Owing to the widespread incidence of tsetse fly—the dread carrier of animal sleeping sickness (trypanosomiasis)—these zebu cattle cannot live in the Coastal belt. The only cattle to be found in this latter area belong to a dwarfed type locally known as Pagan or West African Shorthorn. These cattle are very small, measuring when fully grown no larger than a donkey or Shetland pony. They have no hump and have very short stumpy horns. Their heads in some cases look large in proportion to the rest of the body. It is unfortunate that they are of so little economic usefulness for they have the valuable characteristic of being able to live and thrive in the dense tsetse-fly belts of the Middle and Coastal regions of the country where the humped zebu cattle would promptly die from trypanosomiasis.

This resistance to trypanosomiasis has been acquired through generations of exposure to infection in the dense tsetse-fly belts. Those that survived an attack of the disease transmitted to their offspring through the years a growing resistance until they were able to live and thrive without inconvenience under conditions of constant exposure to infection. This resistance does not amount to a complete immunity for if the animals are moved from their natural habitat or if they are exposed to infection of another disease as, for instance, rinderpest, they may die from trypanosomiasis.

This same phenomenon of resistance to disease is witnessed among the native community in areas endemic to trypanosomiasis and malaria infections.

The origin of these humpless cattle is not definitely known but it is thought that they came originally from Asia with the early migrations of tribes, across northern Africa and down the west coast as far south as Nigeria. The estimated population of these cattle in Southern Nigeria is about 200,000.

Meat Industry

Meat is the most important and most valuable product of the livestock industry and it enters largely into the dietary of the natives in Nigeria. It is estimated that at least 400,000 cattle and probably about 4,000,000 sheep and goats are slaughtered annually for food. With the exception of about 25 per cent. which enter from French territory all these animals come from the herds and flocks of Northern Nigeria.

During the war it is likely that this importation from French territory will be diverted to other markets and the deficiency will have to be made up from Nigerian herds. In addition to the animals slaughtered in

Nigeria there is a growing trade in slaughter cattle to the Gold Coast where the heavy demands for meat from the mining areas of that Colony cannot be met from the small local herds. It is likely before long that the demands from the Gold Coast will be increased.

Of all the cattle and sheep and goats that are slaughtered only a small proportion are in fat condition. The majority are only in fair condition and some even emaciated; especially is this the case at the latter end of the dry season when grazing becomes both scarce and of poor quality. The gain in the economic value of the trade would be enormous if stockowners could be encouraged to grow fodder crops as supplementary rations for their animals during the dry season, instead of relying entirely on the natural grazing. Large bulls which fetch only £2 10s. to £3 a head would, if given supplementary rations during the dry season and brought fat to the market, fetch from £8 to £10 and even more. The large grazing areas of the country, which owing to their distance from exporting centres at present grow few crops, could in this way be more profitably utilised. There are great possibilities in Nigeria for the profitable development of a scheme of livestock farming.

The additional quantities of meat of better quality which would then become available, besides having its local value, might well form the basis for the establishment of meat works for the manufacture of meat and meat products for local consumption and even for export overseas.

Another factor of immense importance is the local value of a plentiful supply of good meat at a cheap price in a country where the native inhabitants are common sufferers from chronic malaria and in some areas also trypanosomiasis. The extra meat ration would be a potent factor in maintaining health and fitness and increasing their earning capacity, especially in the production of mining and agricultural products for export.

A scheme of this sort would also be at least one solution of the problems of overstocking and soil erosion which are so pressing in some African Colonies. More cattle could be carried to the acre than is at present possible on natural grazing only. It would also make an important contribution to disease control by removing the need for the migration of cattle in the dry season to the dangerous tsetse areas in the vicinity of large rivers and streams in search of better grazing.

Milk, Butter, and Clarified Butter Fat

Milk and butter are other important products of the livestock industry and although they do not enter largely into the regular diet of the native, they are nevertheless consumed in fairly large quantities in the Northern Provinces. In the Southern Provinces milk and butter are not available owing to the difficulty of transport from the cattle areas of the north.

The trade in these products is capable of considerable expansion in the interests not only of the export trade in butter fat, but also of the health and fitness of the local community.

Even in the cattle areas of the north milk is not consumed in the fresh state but only after it has been soured and churned into butter. The fresh milk is put into gourds which have previously contained soured milk, and the lactic acid ferment in the gourds soon sets up souring in the fresh milk which is then churned into butter. The butter milk with its contained pats of butter is then taken by the women folk to the nearby markets, which incidentally may be seven or more miles away, and sold at from one farthing to one penny a pint and the butter at from 1½d. a lb., the price depending on the local demand.

Until a few years ago the only market for this butter was the local demand, and this demand did not by any means exhaust the available supply. Because of this small market for butter much of the resources of the herds remained unexploited until an export trade in clarified butter fat was established. From a small beginning in 1933, when about ten tons were exported, the trade in clarified butter fat has grown into a prosperous industry which affords an assured market for all the butter that can be produced. Last year some 2,400 tons of clarified butter fat were exported to England where it is used by pastry cooks, confectioners and as an ingredient of some brands of margarine.

This export trade is now in the hands of a commercial firm who have established up-to-date factories at several centres in the country, where the butter bought from the natives is melted down and the pure fat clarified for export. Every effort is being made to increase the export of this product to at least 4,000 tons a year. The price paid to natives for the butter varies from 2½d. a lb. to 4d., depending on the season of the year and the distance from the factory.

This industry is of value not only to native stockowners who can now develop the dairy resources of their herds to the fullest possible extent and sell their products more profitably, but also to England where it is an added source of supply of essential edible fat of good quality.

But much remains to be done to educate native owners in more hygienic methods of production of both milk and butter.

The scheme for the cultivation of fodder crops as supplementary rations, as outlined above in connection with the meat industry, could be utilised also to provide the increased quantities of butter which are now required. The more settled mode of life which would result from the scheme would provide opportunities also for cleaner methods of dairy production.

Hides and Skins

The other main product of the livestock industry of Nigeria is hides and skins: the annual export includes about 800,000 cattle hides, 4½ million goat skins and 1½ million sheep skins and reaches a value of about £1,000,000.

By far the most important part of this trade is the export of goat skins to American, Continental and English markets. The extra fine quality of Nigerian goat skins, especially those from Sokoto and Kano Provinces, makes them especially suitable for the manufacture of high-class, glacé kid leather for which purpose they are in enormous demand in overseas markets. The red goat of Sokoto Province, and the brown goat of Kano Province are in greatest demand and command the highest prices. America takes at least 50 per cent. of Nigeria's export of goat skins. All skins and hides are exported in a sun-dried condition and great care has to be taken that the process of curing is carried out in a proper manner, as carelessness here can easily set up putrefaction with its consequent damage to the skin or hide. The damage caused by putrefaction cannot be detected in the dry skins, and merchants and overseas buyers, to cover themselves

against possible loss through the purchase of damaged skins, offered lower prices. It was the native producer who was the loser and through him the country generally. Skins and hides that would have been a valuable contribution to the Empire's resources were rendered useless through their careless preparation.

It was soon realised that if this wastage was to be stopped and the general standard of Nigerian exports raised, Government action must be taken to supervise the preparation of the raw skins and hides. The common practice of the natives up to a few years ago was to lay the skin or hide flat on the ground to dry, and this was liable to set up putrefaction and cause serious damage, even to the extent of rendering the hide or skin worthless to the tanner. Very many skins and hides were damaged in this way and much wastage occurred. A hide and skin improvement scheme was therefore commenced in Nigeria a few years ago by the Veterinary Department and the general improvement in flaying and drying and in the standard of quality which has already resulted has increased the demand for and raised the price of the Nigerian products in local and overseas markets. If hides and skins are hung on a frame or over a rope or wire with their sides kept apart, drying goes on satisfactorily without putrefaction.

Much damage was caused also by knife-cuts from careless flaying. Every knife-cut on the raw skin is a blemish in the finished leather and skins damaged in flaying are reduced in value and even made completely worthless.

Under the present scheme native butchers are given a course of instruction in flaying, and now, instead of the careless slashing with a sharp-pointed native-made knife, which was the practice formerly, skins are now pulled off by hand—the knife being used only for the initial incisions in the carcase—and instead of the skins being laid on the ground in the strong sun to dry they are tied to frames or hung over a rope or wire under the roof of an open shed. The slow complete drying which takes place produces a perfectly cured skin of high value to tanners for manufacture into fine glacé kid and suede leathers.

Beside the six million goat and sheep skins which are exported in the raw dried state, there is a considerable number of goat and sheep skins tanned in the country by native tanners and the leather is known in the trade as "Morocco," probably because it first came from there. The method of tanning followed by the natives produces leather with the special qualities of being able to withstand the rotting action of the atmosphere of our commercial cities. On account of the lasting properties of Nigerian tanned leather and its attractive appearance it is in demand in England and continental countries for high-class furniture making and book binding.

Goat Breeding

Some breeds or types of indigenous goats of Nigeria, as I stated earlier, are of greater economic value than others because of the finer quality of their skins from the point of view of leather manufacture. This is especially so in the case of the red goat of Sokoto Province and the brown goat of Kano Province. The skins of these two breeds or types are among the finest in the world and the demand for them far exceeds present supplies. Unfortunately, because of indiscriminate breeding with other types, skins of the pure type were becoming scarce, but as the result of a scheme of selective breeding the pure types are now being re-established. All cross-bred male goats are castrated and only pure-bred male goats used for stud purposes. It costs the native farmer no more to breed and rear a pure-bred goat than a cross-bred one, yet for the pure-bred skins he gets at least sixpence more than for a cross-bred. Sokoto Province alone exports some 1½ million goat skins annually so that the economic results of this breeding scheme are very considerable.

The other products of the livestock industry such as horns and hoofs, gut casings, hair and wool are not, as far as Nigeria is concerned, yet sufficiently developed to warrant any detailed consideration here.

THE HYDROGEN ION CONCENTRATION OF VAGINAL SECRETIONS OF COWS*

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No very definite information is available on the normal hydrogen ion concentration of the vaginal or cervical secretions of the cow. It has long been known that diseased conditions of these organs produce an exudate that is detrimental to spermatozoa and in this way usually prevent conception. However, in these cases the injurious effect on the sperm has been thought to be due to the constituents of the abnormal secretions and not to an abnormal hydrogen ion concentration. Cows having abnormal secretions of the cervix or vagina rarely conceive and this is particularly true if any number of leucocytes are present in the secretions. The effect of leucocyte-containing exudates on the sperm has been well demonstrated in the human. Such exudates have the power to repel and also to kill the sperm should any attempt penetration. Thus the spermatozoa are not only unable to gain entrance to the cervical canal and uterus but are killed by the unfavourable surroundings. On the other hand, normal secretions, which are relatively free of leucocytes, attract sperm and seem to favour their progress. The *p*H of these secretions is not definitely known. Hochloff[1] examined the cervical secretions of 100 women. A part of these were normal, the remainder were abnormal. A large variety of conditions were represented in the abnormal group. He found that the *p*H range was from 8 to 9 both for the normal and pathological. Thus the findings for the abnormal fell within the normal range and no diseased condition gave a consistently high or low reading. The author concluded that the determinations were of no significant diagnostic value. He says that Kraul and Bodnar obtained a *p*H range about one point lower than the above for the cervical secretions of women. Perhaps the difference is due to methods employed. Oberst and Plass[2] reported that, "The *p*H of the vaginal discharge varies directly with the character of the vaginal flora, higher acidities being associated with a preponderance of the vaginal bacilli of

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Döderlein which are normally present in pure culture but may be entirely absent in certain infections (gonorrhoea). The vaginal discharge is quite acid (*p*H 4·0 to 4·5) during the intermenstrual period but approaches or exceeds neutrality during the early days of menstrual bleeding. During gestation the acidity is somewhat less than in the non-pregnant, irrespective of the bacterial character of the discharge."

Hall and Lewis[3] worked with monkeys (macaque) in an attempt to determine additional reasons for favourable results from oestrin treatment of gonorrhoeal vaginitis of children. The range of the vaginal secretions of immature macaque was found to be between *p*H 7·6 and 8. After injection with amniotin the *p*H fell to from 5·4 to 5·7. After discontinuing the injections the hydrogen ion concentration rose again to from *p*H 8·6 to 8·8. Vaginal washings from normal children were found to be between *p*H 7·0 and 7·2. Similar washings from children with vaginitis were from *p*H 6·8 to 6·9, The authors state that G. Soeken found the *p*H of vaginal washings from children treated with oestrin to be from 5·0 to 5·9. They conclude that that change in *p*H accounts for the favourable results obtained from oestrin treatment of gonorrhoeal vaginitis of children. These findings were not confirmed by Ranson and Zuckerman[4] who report that oestrone did not influence the vaginal *p*H of monkeys. The normal range was from *p*H 5·2 to 8·7. There seemed to be a slight rise just at or before menstruation. Otherwise there was no cyclic change.

In an attempt to learn something of the reaction of vaginal secretions a number of heifers and cows were examined. A total of about 380 determinations was made. The determinations were made daily, except Sundays, on eight virgin heifers and three cows. Examinations of the cows were made in late gestation, after they had calved and again in the early part of the next gestation. Only five daily determinations were made upon four of the heifers while the bulk of the work was upon the four remaining heifers, two of which were spayed between series of tests to determine whether or not this would influence the vaginal *p*H. The tests were run over varying periods of time extending from 18 to 37 days. Thus an attempt was made to obtain daily determinations over a period long enough to cover a complete oestrus cycle. This should give some idea of the influence of the oestrus cycle on the vaginal *p*H. Material for *p*H determinations was obtained by a vaginal washing method. With a syringe and glass tube, 50 c.c. of warm, fresh physiological salt solution was introduced into the vagina in the region of the cervix. After a lapse of about a minute enough was withdrawn through the same tube and syringe for a determination. This was placed in a glass tube, stoppered and shortly thereafter its *p*H was obtained, using a potentiometer with glass electrodes. There is nothing original about the method nor is it claimed that it is perfect.

The cows in late pregnancy in March showed a variation between *p*H 7·0 and 8·8. After calving the range was about the same but on the average tended to be a little lower. After the cows became pregnant again in July the *p*H tended still lower and ranged between *p*H 6·0 and 7·0. At present no significance is attached to these variations, as will be explained later. It will be observed that the first series of tests with the four heifers (Nos. 43, 45, 50 and 58) were made in the late winter between February 11th and March 19th. The second series were made between April 25th and May 14th and the third between July 13th and August 2nd. The graphs, Figures 1 and 2, show the range and variations of the hydrogen ion concentration throughout these periods, together with time of the heat periods and the dates on which two of the heifers (Nos. 45 and 58) were spayed. During the initial series, February 11th to March 19th, the changes were quite violent and ranged between *p*H 5·1 and 8·8. Between April 25th and May 14th this was less marked; the range was much narrower, between *p*H 6·2 and 7·7. Heifers No. 45 and No. 58 were spayed on May 21st and the third and last series of tests were made during July and August. Again the *p*H range was more narrow and perhaps a little lower for all four heifers. The unspayed heifers varied between *p*H 6·2 and 7·3 while the spayed animals varied between *p*H 6·25 and 7·1. On the whole the spayed heifers varied within a slightly narrower range and gave more uniform day-to-day readings but these differences are not significant. Aside from one instance all determinations were above neutral at the time of heat.

Throughout the first two series of tests the animals were stabled together and received the same feed. During

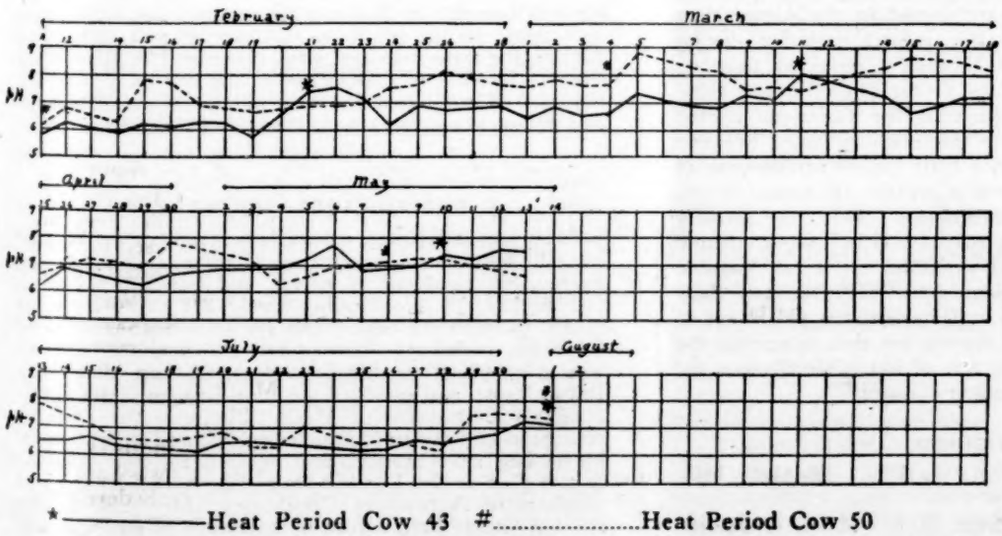

Fig. 1.—Graph showing the variations in daily *p*H readings of the vaginal secretions from two cows over three test periods.

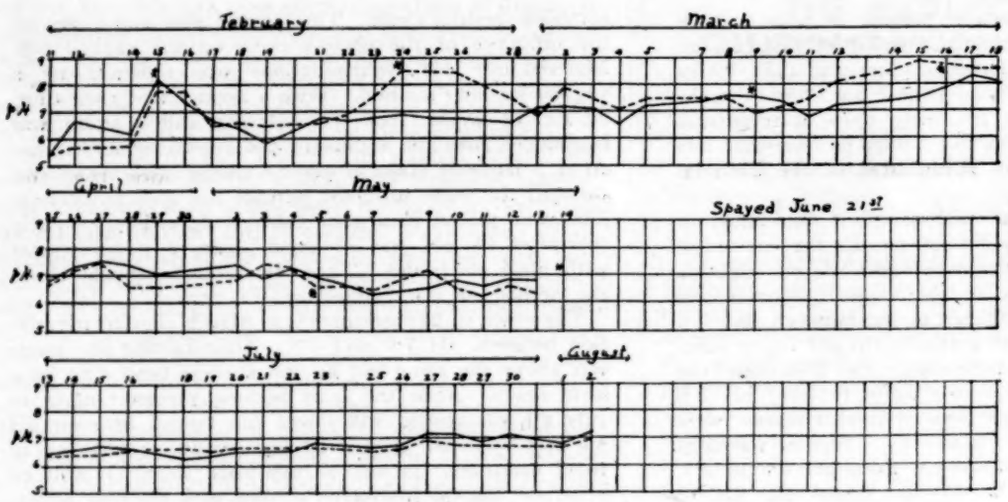

Fig. 2.—Graph showing the variations in daily *p*H readings of the vaginal secretions from two cows that were spayed between the second and third test periods.

the third series of tests they ran together in the same pasture.

These determinations are not sufficiently extensive definitely to prove anything but do indicate certain possibilities. In the first place the ovaries seemed to have little or no direct influence on the *p*H of the vagina (see the reference to Ranson and Zuckerman above). However, the ovaries may have an indirect passive effect. In regard to possible changes due to the oestrus cycle only one point is of interest. At the time of oestrus one reading was slightly below neutral, *p*H 6·75, whereas all others were at the neutral point or above. These findings seem significant and are the only evidence of cyclic changes. This does not necessarily mean that the vagina becomes more alkaline due to alkaline secretions from its walls. Secretions from the cervix and cervical canal appear to be more alkaline than those of the vagina itself. During heat in the cow the cervical secretions are so abundant that it is thought they may indirectly influence the more acid content of the vagina by their passage through it. This may account for the apparently more alkaline condition of the vagina during heat. Necessarily this would not occur in spayed heifers. A greater variation in day-to-day readings was observed in the winter than in summer. Apparently this greater variation during the winter was accidental because a series of tests on the same non-pregnant cows a year later did not show such changes. In the later tests the variations tended to be narrower. Usually the readings were between *p*H 6·0 and *p*H 7·0, being a little higher at the time of oestrum. The cows showed a greater *p*H range in late pregnancy than in early pregnancy. This may actually be true or the condition may be either an accidental circumstance or a seasonal variation. It is not possible to draw definite conclusions from these limited data. However, they do tend to indicate that the *p*H is apt to be at or above 7·0 during oestrus but that in general the *p*H of the cow's vagina is not of much significance for diagnostic purposes in breeding diseases.

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BULL CALF FOR WORLD'S RECORD SHORTHORN

"Cherry, the world's highest yielding dairy cow, has confuted all the experts who said it would not be possible to get her in calf again, by producing a bull calf," states the *Farmers' Weekly* in its issue of February 16th. The note proceeds: "This is her sixth calf, and within a few days of calving this amazing Dairy Shorthorn, who gave 4,164 gallons in a year, and eclipsed everything with a 24-hour yield of 14 gallons, is already giving eight gallons a day. And in spite of tempting offers, running well into three figures, from all parts of the world, Cherry's owners, Messrs. Wort and Way, of Red House Farm, Amesbury, Wilts, have decided not to sell the bull calf. Instead it will be retained on the farm, and, in due course, used with the idea of spreading the blood of its record-breaking dam through the dairy herd, which numbers about 300.

"The calf carries a white star in the centre of its forehead similar to that on its mother, has white legs, with white on the pin bone and the tail end. Mr. Alex McKie, the farm manager who 'discovered' Cherry when she was just one of many cows in the bail dairy, told the *Farmers' Weekly* that the calf will be taken off Cherry and put on to another cow at the end of this week."

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A REMARKABLE JERSEY COW

A 16-year-old Jersey cow, Gloria 4909, in the herd of Mr. W. Humphrys Prescott, at Highlands, Woldingham, Surrey, has produced 14 calves, and (officially recorded) yielded 122,474 lb. of milk—nearly 54¾ tons—averaging 11,231 lb. with six calves, and for 15 lactations averaged 8,165 lb., states the *Farmer and Stockbreeder.* "She won over 60 prizes for inspection, Milking Trials and Butter Tests, and qualified for nine English Jersey Cattle Society's Certificates of Merit. She won the Society's champion cup for milk and butter-fat, and first prize for butter-fat, silver medal and reserve for the National Butter Cup at the London Dairy Show, and holds seven Ministry of Agriculture Certificates. Mr. Prescott says she has 'never been forced or pampered in any way, and during her show career travelled over 4,000 miles.'"

THE VETERINARY RECORD

February 24th, 1940.

AN ADVISER ON ANIMAL HEALTH IN THE COLONIAL OFFICE— A WELCOME DECISION

FOR practically a decade after the death of the late Mr. R. E. Montgomery, the Association has persistently striven to persuade the Secretary of State for the Colonies that the re-appointment of an Adviser on Animal Health was essential to the well-being of the Colonial Veterinary Service and to its maximum contribution to the welfare of the Colonial territories.

As little success met its early efforts, the Association decided to review the many problems of the Colonial Veterinary Service in their widest aspects and began to collect data from all available sources. A Committee on Oversea Services was formed. Gradually, as the Association's mastery of the facts grew, so their influence with the Ministry increased, as was evident from the reception of the various deputations during this period.

In 1939 the Oversea Committee produced a Report on the Colonial Veterinary Service which was discussed by representatives of the Association with the Colonial Secretary himself. Arising from this interview, further discussions took place between representatives of the Association and the Ministry, and agreement was reached upon many matters in connection with the Colonial Veterinary Service.

When, later, the Secretary of State intimated in Parliament his decision to appoint an Adviser on Animal Health in the autumn, satisfaction within the profession was keen, but, alas, as had occurred so frequently before, further disappointment lay ahead. Soon after the outbreak of war, the Association received a letter from the Secretary of State,* re-affirming his conviction that an Adviser on Animal Health should be appointed, but expressing his decision not to proceed with this appointment at the moment in view of the urgent necessity for economy in national expenditure.

Although disappointed, the Association decided to renew its efforts both by direct correspondence with the Secretary of State and through Parliamentary circles, to bring about an immediate appointment, and as an earnest of its desire to assist the Government, it suggested that a part-time appointment, or the seconding of an individual already in the Colonial Veterinary Service, might satisfactorily meet the new situation. (See letter, dated December 8th, 1939, to the Under-Secretary of State, Colonial Office, reproduced below.)

As we had the pleasure of announcing in our last issue, Mr. John Smith, O.B.E., M.R.C.V.S., D.V.H., has been appointed in a part-time capacity as Adviser on Animal Health to the Secretary of State for the Colonies. (The communication from the Colonial Office announcing the appointment is also published below.) This appointment is made in the first instance for two years; we sincerely hope that the appointment will be so justified that it will become fully established at the end of this period. Mr. John Smith has for many years worked quietly on behalf of the profession, both abroad in the Colonial Veterinary Service and at home on such bodies as the Agricultural Research Council, Government Committees such as the Veterinary Education Committee, the Poultry Technical Committee, and as Vice-Chairman of the Standing Committee on Animal Health of the Colonial Office. As a member of the Oversea Committee of the "National," and as a frequent member of the deputations sent by the Association to the Colonial Office we fully appreciate the breadth of his knowledge and experience which will undoubtedly prove an invaluable asset to him in the prosecution of the heavy and important tasks he has undertaken. We extend to him our best wishes for his success.

In conclusion, we would express our thanks to Mr. Malcolm MacDonald, the Secretary of State for the Colonies, and to his staff, for their patient and sympathetic consideration of the many problems that the Association put before them. We are naturally delighted that the arguments so carefully prepared by the Association have now been accepted, that the need for technical advice at headquarters is realised and that the work of the profession in the Colonies has been acknowledged in a way which will evoke confidence within the Colonial Veterinary Service and will be understandable by the other Colonial Services. Already benefit has resulted from the goodwill and mutual understanding which has been developed during these negotiations between the representatives of the Ministry and those of this Association. We are confident that co-operation will be strengthened by the appointment of Mr. John Smith and that the Colonial Veterinary Service and the profession may look forward to an enhanced appreciation of the value of that Service by the Government and the public, and that a full-time appointment will very soon eventuate.

. . . . .

Following is the correspondence to which reference is made above:—

National Veterinary Medical Association,
36, Gordon Square, W.C.1.
December 8th, 1939.

The Under-Secretary of State,
Colonial Office,

Sir,—Adverting to your letter of November 21st, Ref. No. 1150/39, I have to inform you that correspondence which has reached this Association emphasises the distress that the decision of the Secretary of State again to postpone the appointment of an Adviser in Animal Health

*See *Veterinary Record*. **51**. 49, 1425.

has caused to veterinarians in this country. That distress will be more than shared by those serving in the Colonies when news of the decision reaches them. I am directed, therefore, to bring the following to the notice of the Secretary of State.

Whilst fully appreciating the necessity for every possible economy under existing conditions, the Association is convinced that such a result would not follow the action now contemplated; indeed, it is felt that the opposite would be the case. During war-time, disturbances or breakdown of normal conditions occurs in places even remote from the scene of actual hostilities and the disturbance is often followed by unforeseen results. There is ample evidence of the increase in diseases, and particularly the major transmissible ones, at such times. Under ordinary conditions, it may be possible to keep these diseases in a quiescent state by constant vigilance. Any relaxation may cause a recrudescence which may have the most serious results. The situation in the East African territories, for example, during and after the last war, in regard to major diseases of stock, is ample evidence of the result of relaxation of control measures. The dangerously increased disease was not confined to those territories in which hostilities were carried on. The Association is unaware of the present position regarding rinderpest in the territories named, but it is known that, only a short time ago, extensive emergency measures had to be taken to endeavour to stop the advance of the disease to the clean territories to the South. It is also known that considerable apprehension has been expressed in regard to the further menace of this disease. Therefore, the appointment of an Officer who could advise on co-ordinating measures is now a matter of urgency.

A further aspect is that, during war-time, necessity causes the transference of foodstuffs for man and stock, often along unusual routes, from places where disease exists to territories which are free. The necessity for someone who can keep in touch with the whole situation in the Empire, and advise accordingly, appears to be vital. Co-ordinated effort in this direction may prevent difficulties and even embargoes arising in the transfer of essential commodities.

The Association is aware of the enthusiasm which has been aroused by the announcement that an Adviser on Animal Health would be added to those now available to the Secretary of State. Veterinarians in the Colonial Service have carried on their duties for some years under a sense of depression and disappointment. Under existing conditions, they, with others, must be affected by the general anxiety. If this further disappointment comes to them, the effect will be considerable.

I am directed strongly to emphasise the view that the immediate appointment of an Adviser on Animal Health is not only an urgent necessity, but will be a real economy. Realising that the time of the Secretary of State is more than fully occupied with urgent matters, no request for an interview is, at the moment, made. If, however, the Secretary of State wishes the views expressed amplified, a delegation will wait upon him at any time convenient to him. It is, however, urgently requested that the points outlined above may receive his careful consideration and the hope is expressed that they may cause him to reconsider the decision which he has taken.

Should the creation of an entirely new appointment be impossible, however, the Association would suggest the following as possible alternatives—either that a part-time appointment should be made of a retired member of the Colonial Veterinary Service resident in this country, or that a suitable person in the Colonial Veterinary Service should be seconded for the period of the war for duty at the Colonial Office.

I have the honour to be,
Sir,
Your obedient Servant,
F. Knight,
General Secretary.

Downing Street,
February 8th, 1940.

The General Secretary,
National Veterinary Medical Association
of Great Britain and Ireland.

Sir,—With reference to Colonial Office letter No. 1150/39 of December 14th last and previous correspondence, I am directed by Mr. Secretary MacDonald to inform you that he has given further consideration to the question of appointing an Adviser on Animal Health in the Colonial Office.

2. As a result, Mr. MacDonald has concluded that it would be inexpedient, in present circumstances, that the restoration of this post should be further postponed, and he has accordingly decided, after consultation with the Lords Commissioners of the Treasury, to constitute the appointment, on a part-time basis, for a period of two years in the first instance.

3. In communicating this decision to you, the Secretary of State is glad to be able to add that the appointment is being offered to Mr. J. Smith, O.B.E., M.R.C.V.S.

It is hoped that Mr. Smith will commence duty in the Colonial Office at an early date.

I am, Sir,
Your obedient servant,
C. J. Jeffries.

LIVESTOCK NOT COVERED BY FARM CREDIT PLAN

Purchases of livestock, farm wages, and payments for such work as drainage, hedging and ditching will not be included in the new short-term credit scheme to be operated by the county war agricultural committees.

This is revealed in a letter to the committees from the Ministry of Agriculture. The scheme will, however, cover the purchase of seeds, fertilisers, implements, feeding stuffs, and silos, as well as the cost of contractors' services for ploughing, cultivating or harvesting.

Farmers who apply to the county committees for assistance will have to satisfy them: (1) that the goods or services are needed to enable the farmers to comply with the committees' orders; (2) that they have taken all reasonable steps to obtain the requisites elsewhere on credit or otherwise; and (3) that they will be in a position to repay the cost within a given time.

If necessary, the committees will be able to deduct the cost—plus the 5 per cent. interest—from any sums due to the farmer for his crops, or from wheat deficiency payments or the monthly milk cheque.

County committees have been told that it is not intended that they should compete with the banks and the merchants as sources of supply of short-term credit. It is also emphasised that there is no intention of disturbing existing trade channels, and the committees are not to become dealers in "goods and services."—*Farmers' Weekly.*

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ACCREDITED LICENCES

"The Milk Marketing Board have taken prompt action over the decision of the Milk Committee of a County Council who had ruled that for the duration of the war no new licences for the production of accredited milk would be issued if the application had not been received prior to September 1st, 1939," states the *Home Farmer* (the Board's official journal), which continues: "The difficulties of supervision during wartime were, apparently the reason for this decision being reached. The Board immediately took up the matter with the Ministry of Agriculture because they felt that the County Council's action was outside their powers. The Board have since had the assurance that there is to be no restriction in practice in the issue of Accredited milk licences other than those imposed in the ordinary way by the Milk (Special Designations) Order."

CLINICAL COMMUNICATION

PARTURITION IN THE CAPUCHIN MONKEY

CONNIE M. FORD, M.R.C.V.S.
New Eltham

Biological Note

Capuchin monkeys are natives of South America. They are about the size of cats and have prehensile tails. Though fairly common as pets, until recently they were never bred in England as they are rather delicate in this climate, being particularly subject to rachitis.

The average life is about 30 years, puberty occurring at five to six years. The sexes are alike in voice and appearance.

The oestrus cycle varies, but most healthy females menstruate once a month, even in old age.

Sexual desire in the male is often lacking in captivity. Even when a male courts a female with considerable ardour he frequently refrains from actual copulation. There are several different kinds of capuchin, but in captivity those that do breed mate indiscriminately. For example, the two living female offspring mentioned below are crosses between *Cebus monachus* and *Cebus macrocephalus*. In the cases observed the female suckled her young for a year or more. In one case the gestation period was definitely known and proved to be 165 days. Placentation takes the form of two large oval cotyledons.

Historical Note

Of the three capuchins born at the London Zoo only one has lived. This was a male, born in December, 1933. It is still alive and healthy and is now in a private collection attended professionally by the writer.

In this establishment four capuchins have now been born, two of which have lived. Another healthy capuchin has been sired on the premises by one of the males there, and born elsewhere.

The two born alive on the premises are both females, and bred from the same parents—one, " Mimulus," in August, 1936, and the other, " Heidi," in December, 1937.

Another pair of monkeys produced a dead but fully formed male in April, 1938, while the live female sired on the premises was born in August, 1939.

All the births so far had been so quick as to occur unobserved, but in one case (Mimulus) the placenta was removed by hand and separated from the infant by section and ligation. The umbilical cord, though slender, was too tough to tear.

Case Record

In the winter of 1939 another small female about five years of age was found to be pregnant. It was not known when she was due.

On January 1st, 1940, straining occurred and a little mucoid discharge was passed. The patient was too wild to permit palpation except by the owner. The abdominal enlargement was considered too high to denote full time. As no such symptoms had been shown by the other monkeys during pregnancy an abortion was expected.

Occasional straining occurred at intervals for the next few days, then ceased altogether, although the discharge continued. The monkey ate well and was quite bright. At first the owner thought she felt the head just under the diaphragm. Later, when the straining had ceased it was lower and to one side. One day the monkey was dragging one hind leg, but there was no true paralysis, and the lameness disappeared in a few days. The discharge became thinner and more copious.

On January 13th the head was thought to be in the midline at the brim of the pelvis. Mild straining occurred and a little blood was passed. Movements of the foetus were thought to have been seen.

Early on January 14th, more straining occurred and the face of the foetus was presented at the vulva. When first seen one eye had evidently been enucleated by the patient, and the foetus was obviously dead.

For the next two or three hours there was only occasionally slight straining, but the head of the foetus was gradually extruded. The patient was fairly bright.

As soon as the head was protruding sufficiently to afford a good grip the foetus was removed by hand. Adequate restraint was impossible, but by means of a thick towel wound round her neck and body the patient was kept as still as possible.

The foetal occiput was jammed in the pelvis, and removal appeared to crush the skull completely, but the rest of the body followed with ease. Gentle traction on the cord sufficed to remove the placenta.

The foetus was a female, fully formed, with finger nails, and sparse long hair on the back, though the baldness of the ventral area suggests that it may have been slightly premature.

The mother was kept quiet for a few days, but she ate well and appeared quite normal. There was no obvious lactation though she frequently caught up a bundle of straw and rocked it at her breast as monkeys do their young. I am assured, however, that this has always been a habit of hers.

Discussion.

In woman the occiput is normally presented first, so probably the facial presentation was abnormal and may have caused the dystokia.

On the other hand, the pelvis appears to have been somewhat narrow, possibly due to rachitis, from which the monkey was known to have suffered slightly in its youth.

In conclusion, I would like to thank the owner, Miss Ninette Austral, for supplying me with such detailed and helpful reports of her observations of the species.

" The contract for the supply of 700,000 oz. of quinine which the United States War Department has placed with the Netherlands Government is likely to influence the world market position of this commodity," says the *Pharmaceutical Journal*, which continues: " The size of the contract—the largest single transaction of its kind that we can recall—is in itself noteworthy and coming, as it does, at a time when other countries are also requiring unusually large quantities of quinine the deal is of enhanced interest. It is understood that a further quantity of 100,000 oz. of the alkaloid is required to complete the stock which the American Government has planned to lay by as part of the programme for storing materials essential to national defence."

ABSTRACTS

[SULPHANILAMIDE N THE TREATMENT OF STREPTOCOCCIC MASTITIS. Gildow, E. M., Fourt, D. L., and Shaw, A. O. (1939.) *J. Dairy Sci.* **12**. 759-766. (2 figs.).]

An account is given of the treatment of 16 cows for streptococcal mastitis with sulphanilamide. Nine acute cases responded favourably, but one showed severe toxic symptoms after a few days and treatment in it had to be discontinued. A number of chronic cases derived benefit from the therapeutic administration of sulphanilamide, but no improvement was detected in three cases of initial infection in which clinical symptoms were in abeyance.

Studies of the blood and milk concentrations of sulphanilamide necessary for therapeutic efficiency showed that it is possible to attain a level of approximately 8 mg. per 100 c.c. only when the dose is 10 grammes per 100 lb. body weight. This is twice the dose recommended for the human subject, in whom a concentration of 10 mg. per 100 c.c. is attained. Doses of 10 grammes or even 15 grammes of sulphanilamide per 100 lb. body weight over a period of three to ten days fail in all cases to sterilise udders affected with streptococcal mastitis of the *β-haemolytic* strain, regardless of the clinical condition of the case. Even in recently infected non-clinical cases the organism is not eliminated. The clinical symptoms of mastitis, however, are greatly relieved in most cases by doses of 5 to 10 grammes of the drug per 100 lb. body weight. These doses appear to be as effective as larger ones, and produce no toxic effects.

In the course of these studies toxic symptoms were observed in two cows in which the daily dose of sulphanilamide was 15 grammes per 100 lb. body weight. The clinical signs included sluggishness, anorexia, pyrexia, reduced secretion of milk, staring coat, hyperpnoea, and increased pulse rate. One of the affected cows developed marked enteritis and died. Autopsy revealed marked cyanosis of the musculature. The other showed extensive eczema after exposure to the sun, but recovered when administration of the drug was discontinued.

Intolerance of individual cows to sulphanilamide appears to be relatively common. It is advised, therefore, that constant supervision should be maintained over animals undergoing medication with the drug.

D. D. O.

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[EFFECT OF FERRIC SULPHATE AND COPPER SULPHATE ON COCCIDIOSIS IN LAMBS. Spindler, L. A. (1939.) *N. Amer. Vet.* **20**. 5. 33-38.]

Spindler records the results of an experiment carried out to determine the effect of daily administration of a dilute aqueous solution of ferric sulphate and copper sulphate to lambs infected with coccidia (*Eimeria* spp.). The lambs, naturally infected with coccidia, were experimentally infected at intervals with larvae of *Haemonchus contortus*, *Cooperia curticei*, *Oesophagostomum columbianum* and *Chabertia ovina* to lower or break down their resistance to the protozoa. The result of the administration of the iron-copper solution was apparently the production of a resistance that inhibited, to some extent, the numerical increase of the coccidia in treated animals. During almost the entire experiment the faeces of untreated animals showed higher numbers of oöcysts than in the faeces of treated lambs, while the peak of infection in the treated group occurred 18 days later than in the untreated controls. No significant difference was noticeable between experimental and control animals either in the number of worm eggs in the faeces or in the number of worms found at *post-mortem* examination.

J. N. O.

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[TRICHINOSIS. McNellis, R. (1939.) *Vet. Bull. U.S. Army.* **33**. 306-316. (4 tabs. 6 refs.).]

Two surveys of the prevalence of trichinosis in pigs and man have been made in recent years in the United States of America. One, commenced in 1933 by the Bureau of Animal Industry has shown that of 6,662 pigs fed on grain, 6,684 fed uncooked garbage, and 1,987 fed cooked garbage, 0·91, 4·41, and 0·55 per cent. respectively were affected. The pig fed on uncooked garbage is thus incriminated as the main source of human infection. The other survey was commenced in 1935 by the United States Department of Public Health. The diaphragms of 3,000 persons were examined, and 16·3 per cent. were found to be infected. In most cases infection was slight and caused no clinical symptoms. Most reported cases occurred either in the eastern or western parts of the States, where the majority of garbage-fed swine are raised. More cases have been reported from New York and California than from any other states.

Pigs, in general, are quite resistant to the parasite and large numbers of larvae can be ingested without causing clinical symptoms. Only one pig of 15,333 examined by the Bureau of Animal Industry showed clinical symptoms although 357 were found affected on autopsy. The symptoms exhibited included diarrhoea, hyperpyrexia, stiffness, oedema, emaciation, dysphagia, and dyspnoea. In humans diagnosis is difficult owing to the absence of pathognomonic symptoms but to date as many as 6,000 clinical cases have been reported. The parasite in the digestive system causes diarrhoea, vomiting, pyrexia, and intestinal haemorrhage. When the larvae reach the blood stream and muscles enlargement of the spleen, hypotension, swelling below the eyes, dyspnoea, dysphagia, laryngitis, pneumonia, skin eruptions, pyrexia, and rheumatic pains are characteristic.

Several measures are advocated for controlling the disease. These include propaganda urging the public to cook pork well, efficient meat inspection, microscopic examination of pork for cysts, freezing of pork (at 5° F. for 21 days), intradermal testing of pigs, irradiation of pork by high voltage X-ray, control of rats, the raising of pigs under swine sanitation systems, and the introduction of legislation requiring that garbage is boiled before being fed to pigs. Chief stress is laid on the last measure. Trichinosis in man rests essentially on swine trichinosis which, in turn, results primarily from feeding uncooked garbage. The basic solution lies in keeping raw pork scraps out of the feed, and legislation to that effect is essential for control.

D. D. O.

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[A NOTE ON THE OCCURRENCE OF *BR. ABORTUS* AGGLUTININS IN FARM HORSES IN THE EAST OF SCOTLAND. Taylor, A. W. (1939.) *J. comp. Path.* **52**. 140.]

The sera of 997 horses were tested for the presence of *Br. abortus* agglutinins by means of a standard

technique. The sera of 769 horses gave a negative reaction ; 188 (19·6 per cent.) reacted only at a dilution of 1/10 ; 21 (2·1 per cent.) at 1/20 and 19 (1·9 per cent.) at 1/40. The reactors were arranged into class intervals according to age and the figures were further subdivided according to the sex of the horses. By statistical analysis it was found that agglutinins present in the blood of horses above a titre of 1/10 were related neither to sex nor to age.

S. J. E.

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[**THE SANITARY CONTROL OF MILK SUPPLIES DISTANT FROM THE LABORATORY.** Hale, M. W. *Vet. Bull. U.S. Army.* **33.** 203-210.]

The Public Health Milk Ordinance and Code (1936) set up bacteriological standards for milk based on counts obtained by the direct count method. A number of examples illustrating the efficacy of the test are quoted. Specimens of the delivery samples of milk are treated with formaldehyde and are sent each month to the laboratory. From February 1st to April 30th one dairy showed an average count of 435,800 organisms per c.c. The count was considered slightly high, and when in May the count rose to 1,948,000 bacteria per c.c. the dairy contract was cancelled. Examination of the herd revealed that mastitis was present at an incidence of nearly 25 per cent. Elimination of infected animals brought the counts down to 144,100 for July, 159,300 for August, and 75,300 for September, and the dairy was reinstated.

In another dairy showing streptococci in the milk, elimination of suspected animals caused a drop in average counts from 326,000 in June to 132,600 in July, 189,200 in August, and 65,900 in September with elimination of streptococci.

A third dairy showed a sudden increase in both total and streptococcal counts. Investigation revealed an unusually prolonged holding time prior to pasteurisation, and when this was corrected there was an immediate lowering of the counts.

The standard plate method of examination is compared with the direct count method as a means of sanitary control of the milk supplies, and the importance of the latter method is emphasised specially when the supply is at a distant point from the laboratory.

In the United States in Grade A raw milk 50,000 bacteria per c.c. are allowed if clumps are counted, and 200,000 per c.c. if individual organisms. For grade B raw milk the limits are 200,000 and 800,000 respectively.

High counts by the direct method are held to indicate that there is a high original contamination of the milk prior to receipt, that the milk has been improperly handled, was allowed to become warm, or was improperly preserved before delivery. The presence of large numbers of leucocytes indicates the commencement of mastitis in the animals of supply.

D. D. O.

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[**NEW TABLES OF ORGANISATION.** Report. *Vet. Bull. U.S. Army.* **33.** 331-337.]

The disposal of the veterinary organisations of the United States army at war strength is set out.

The regimental detachment with a cavalry regiment has three officers and 14 enlisted men. The equipment includes one veterinary dispensary and three sets of veterinary pack material.

The regimental detachment with a horse-drawn field artillery regiment comprises two officers and twelve enlisted men. The equipment includes two veterinary dispensaries. In a field howitzer regiment the veterinary detachment is two officers and ten enlisted men. Four non-commissioned officers are allotted to the detachment because of the larger number of animals assigned to the latter regiment.

One veterinary troop is allocated to each cavalry division of approximately 9,000 animals, and consists of four officers and 61 enlisted men. The troop consists of a troop headquarters and three platoons. The first platoon is responsible for hospital routine and has surgical and medical sections. The second and third platoons operate lead line and motor evacuation sections respectively. Although the first platoon is organised to render hospital treatment to casualties, cases requiring prolonged attention are evacuated to a veterinary base hospital. The hospital personnel of the latter includes six officers and 82 enlisted men, and three hospitals are allotted to an army (one per army corps), and one additional for each cavalry division attached to the field army. The hospitals are usually situated in the corps area and as far forward as possible.

Actual evacuation of casualties is performed by the Veterinary Company, Separate, which is under the command of the Army commander and directed by the army veterinarian. Each company has seven officers and 167 enlisted men disposed in a company headquarters and five platoons. Normally one platoon is required to evacuate from each army corps and each cavalry division. No treatment is administered by this company, which is completely motorised.

The war-time allotment of personnel to the veterinarian's office of an infantry division includes one major, one staff sergeant, and one corporal. The division veterinarian is responsible *inter alia* for the inspection of meat, meat goods, and dairy products for his division.

The veterinary personnel allotted to a cavalry brigade in war-time is six captains, two staff sergeants, four sergeants, eight privates first-class, and 14 privates, while allotment of veterinary personnel for army headquarters is one colonel, one captain, and one staff sergeant.

D. D. O.

H.M. STATIONERY OFFICE PUBLICATIONS

The undermentioned have been published recently. Copies can be purchased through any bookseller, or directly from H.M. Stationery Office, at the following addresses—London: Adastral House, Kingsway, W.C.2, and 28, Abingdon Street, S.W.1.; Cardiff: 1, St. Andrew's Crescent; Manchester: York Street; Edinburgh: 120, George Street.

	Price net s. d.	*Post free* s. d.
Statutory Rules and Orders:		
128. *Animal.* Diseases of Animals. The Exportation and Transit of Horses, Asses and Mules (Amendment) Order, dated January 25th, 1940	0 1	0 1½
House of Commons Bills (Session 1939-40):		
16. Societies (Miscellaneous Provisions)	0 3	0 3½

REPORT

[UGANDA PROTECTORATE. Annual Report of the Veterinary Department for the Year ended December 31st, 1938.]

In reviewing the work of the Department the Director of Veterinary Services states that disease control has resulted in a steady increase of stock during the last 15 years. The stock census shows that the maximum density lies in the Eastern Province in those areas where agriculture is mostly developed, and not in the west where trypanosomiasis prevents the utilisation of large areas of excellent grazing land. Trade routes and markets are being reorganised to ease the situation in the east, but no indication is given of the stock/cultivation ratio best suited for the rehabilitation of those areas where modern agricultural practices have caused widespread erosion.

Disease Control.—Rinderpest was present throughout the year in Western Uganda. Infected game was responsible for the constant spread. Control was by vaccination. In the east, one outbreak on the Kenya border and another on the Karamoja border were quickly stamped out by double inoculation. A third outbreak, in Teso, of unknown origin, was cleared up by the combination of double inoculation, serum alone and vaccination.

Contagious bovine pleuro-pneumonia exists only in Karamoja. Trypanosomiasis is widespread in the Western Province, it also exists in other parts of the Protectorate ; no practical control measures are known. Of the other diseases, East Coast fever is enzootic except in certain areas, chiefly eastern Teso and Karamoja.

Animal Husbandry.—Three stock farms are maintained but little information concerning these is given. Castration of scrub stock continues to increase. An increasing number of cattle were marketed. Legislation is to be introduced to control the hides and skins trade.

Glossina Morsitans.—Southern Ankole. Generally speaking, *G. morsitans* are still decreasing steadily in numbers. Several newly discovered foci were attacked.

Report of the Senior Veterinary Research Officer

General improvements are reported in the laboratory buildings, museum and library, and the paddocks have been extended. A reserve of 70,000 units of high titre rinderpest serum was accumulated. An improved glycerinated spleen vaccine was produced, 3 c.c. (approximately 1 gramme of spleen) of which will protect against virus after 14 days. Attempts to cultivate the virus of rinderpest in tissue culture and chick embryo failed. Freezing and drying over calcium chloride failed to preserve the virus. Experiments with cerebro-spinal fluid seemed to indicate that the virus is here absorbed to the leucocytes contained therein. Passage through the bush-pig appears to attenuate the virus. A case of spontaneous recovery to *T. congolense* infection is recorded. Laboratory calves which contracted typical East Coast fever due to the introduction of a few ticks, all recovered ; which seems to indicate that the mortality is small in animals in good condition. *T. theileri* was isolated from the brain of a case of turning sickness. Among other diseases, a case of rickettsia infection in dogs is reported in Uganda for the first time ; Proseptasine appears to be specific, recovery occurring in 48 hours.

Veterinary Education.—A Veterinary Officer has been appointed as Educational Officer. Ten African students were in residence. All six of the final year students satisfied the examiners.

R. F.

MR. JOHN SMITH, O.B.E., M.R.C.V.S., D.V.H.

CAREER OF THE ADVISER ON ANIMAL HEALTH IN THE COLONIAL OFFICE

Mr. John Smith, who on February 12th took up the duties of his appointment, so welcome to the profession, of Adviser on Animal Health in the Colonial Office, vacant since the death of Mr. Eustace Montgomery in June, 1932, is a native of Wigan, Lancashire. At the very outset of his post-scholastic career the livestock branch of agriculture became his primary interest, and his technical education began in 1899 when he became a student at the Agricultural School at Preston, further increasing his knowledge of farm animals by vacation attendance at the farms of the Lancashire County Council and other bodies. In 1902 he received the diplomas in agriculture and dairying, of the Preston School.

During his agricultural training he had developed a deep interest in veterinary work, and in the year of his diplomaship in the former pursuit he entered the New Veterinary College, Edinburgh, removing with that institution to Liverpool University two years later. Qualifying in 1906, he remained on to take the post-graduate course which had just been inaugurated and gained the Diploma in Veterinary Hygiene the following year. Six months' experience in the sphere of veterinary public health followed, as Assistant Veterinary Inspector to the Corporation of Manchester; then came a prolonged spell in the hard school of practice of those days, as assistant to Messrs. Jones and Elmes, of Luton and St. Albans.

Now well grounded in various branches of veterinary work, John Smith sought a wider sphere of experience, and in 1913 embarked truly upon his life's work by entering the Northern Rhodesian Government Service and taking appointment as Veterinary Officer to the Government of Northern Rhodesia. It is of interest to record that, in the course of his duties in this capacity, he supervised the acclimatisation and inoculation of the first large consignment of pure-bred bulls to be imported from England.

The claims of his country in the Great War now intervened and in 1916 he received permission to join the Forces. Serving with the Royal Army Veterinary Corps in France, in the rank of Captain, he was mentioned in despatches.

At the termination of hostilities he returned to Northern Rhodesia, where recognition of his administrative abilities led to his appointment as Chief Veterinary Officer in 1921, and, three years later, to nomination by the Crown to a seat on the Legislative Council. Later, Mr. John Smith was made responsible for the administration of the Agricultural and Forestry Departments as well as that of Animal Health.

John Smith was unsparing in his efforts to promote the well-being of the community in which he lived,

giving of his best in every avenue of service open to him in the development of the Colony. At the time of his retirement in 1933, he was Chairman of the European Settlement Board and a member of the Barotse National Trust, the Agricultural Loans Board and the Victoria Falls Conservancy Board. Furtherance of the interests of his veterinary colleagues in the Colony was also a matter of great moment to him. He did much to foster the Northern Rhodesian Veterinary Association, and, envisaging the value of such a connection with colleagues in the Homeland, encouraged the application for affiliation of that society with the National Veterinary Medical Association, which was appreciatively granted by the "National" in 1930.

Return to England brought about little remission in Mr. Smith's activities. He became a member of the Colonial Advisory Council of Agriculture and Animal Health and later was made Vice-Chairman of its Standing Committee on Animal Health. In 1936, he was appointed a member of the Agricultural Research Council. More recently, he served on the Inter-Departmental Committee on Veterinary Education, while membership of the Poultry Technical Committee has now been followed by that of the Pigs' Experiments Co-ordinating Committee recently set up by the Ministry of Agriculture.

IN PARLIAMENT

Colonial Development

Recommendations of the West India Royal Commission were issued on Tuesday last (Cmd. 6174), and the document containing them is prefaced with a correspondence in which Mr. MacDonald, the Secretary for the Colonies, states the Government decision not to publish now the full text of the Report submitted to His Majesty on December 21st. As, however, it is not intended to delay action in the spirit of the recommendations, these are published, together with a most important statement of policy on Colonial development and welfare (Cmd. 6175) generally.

In an announcement to the House of Commons on Tuesday last, Mr. MacDonald said:—

The Government have decided not to publish at this time the full report of the West India Royal Commission, which is unanimous. But they will carry out the pledge which they gave when the Royal Commission was appointed that they would act without delay on the findings of the Commission, and the complete statement of the recommendations which is being published has been prepared by the Commission themselves and is issued with their authority. The comprehensive nature of those recommendations is the best tribute to the thoroughness and the constructive spirit in which the Commissioners have performed their important task, and I should like to take this opportunity of expressing the Government's sincere gratitude to them. (Hear, hear.)

In the White Paper the Government accept in principle the Commission's main recommendations for the creation of a special organisation under a Comptroller to develop the social services throughout the West Indies, and for the provision by the United Kingdom Exchequer for this purpose of funds of the order of £1,000,000 a year. They also accept the recommendation for the appointment of an Inspector-General of Agriculture for the West Indies. The other recommendations, which are numerous and far-reaching, are under active consideration in consultation with the Governors, and the Government express their intention to act as early as possible in the spirit of the recommendations as a whole.

The Government's statement of policy covers a much wider field than the West Indies alone. It contains the conclusions from a close examination into Colonial problems which the Government had been conducting for some time before the war, and it provides for an important extension of their Colonial policy. In future greatly increased provision will be made for development and welfare throughout the Colonial Empire. The Colonial Development Fund of a maximum of £1,000,000 a year set up ten years ago has proved a very valuable instrument for Colonial development. But it is inadequate both in amount and in scope for the larger purposes which we have now in mind. The Government propose to introduce legislation providing for assistance from United Kingdom funds up to £5,000,000 a year for Colonial development and welfare, and, in addition, up to £500,000 a year to assist in the various fields of Colonial research.

In spite of the demands of war, his Majesty's Government propose to proceed with this policy as far and as fast as the exigencies of the times permit. It should also be noted that the policy applies without distinction to Colonies, Protectorates, and Mandated Territories. (Hear, hear.)

[The statement of policy contains the information that, in planning expenditure from this new source, the Government will enlist the help of a Colonial Development and Welfare Advisory Committee, which will be comprised partly of official and partly of unofficial members. In reaching the decision to establish a Colonial Research Advisory Committee, also, and to allocate a separate sum for colonial research up to a maximum of £500,000 a year, the Government "had in mind the proposal for special provision for research made by Lord Hailey in his 'African Survey' and they take this opportunity of acknowledging their debt to him for the suggestion." These foregoing grants are for a period of ten years. It is stated that there will be assistance and guidance from London, but no spirit of dictation. "The new policy of development will involve no derogation from the rights and privileges of local legislatures." The fact that a colony received financial aid under the policy would not entail upon it the system of financial control which now is associated with the receipt of grants-in-aid. The statement also observes: "In the colonies the problems of development touch upon the work of officers in various departments, such as administrative officers, both at headquarters and in the districts, and the technical officers in the agricultural, veterinary, medical and other services. There is need for machinery to provide complete co-ordination between the efforts of these separate departmental staffs so as to ensure that development proceeds on a balanced and comprehensive plan. . . . It will be the object of the Government to ensure that Colonies are furnished, according to their several requirements, with adequate staff and machinery for this purpose."—*Editor, V.R.*]

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Treasury Grant to Universities

Sir E. Graham-Little asked the Chancellor of the Exchequer if he could make a statement on the Treasury grant-in-aid of the universities and colleges in the coming financial year.

Sir J. Simon: Yes, Sir. Parliament will be invited in the Estimates shortly to be presented to maintain the

provision made for the universities and colleges at the existing level—namely, £2,149,000.

The Government are fully conscious of the vital part played by the universities in the life of the community, and of the importance of maintaining the standards of university education as far as possible in the strained conditions of war. Moreover, the universities are making an essential contribution to the national effort at the present time in supplying personnel of the educational standards necessary for many national services, as well as in affording more direct assistance to a number of Government Departments by means of particular researches, the provision of specialised technical equipment in laboratories, and in other ways. I have satisfied myself, after considering the representations of the Vice-Chancellors and the results of a survey of university finance carried out at my request by the University Grants Committee, that the maintenance during the coming financial year of the present provision is necessary if the universities are to continue to make their contribution to the national effort, and the Government therefore earnestly hope that local authorities will take similar action.

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Miscellaneous (War Provisions) Bill

With the House of Commons in Committee on the above Bill on Thursday of last week,

Mrs. Tate moved an amendment to Clause 11, the effect of which was to enable land which had been under grass for five years to qualify for the £2 ploughing-up subsidy. She said that the land being ploughed up was in many instances land of a quality that would not produce crops at present. In many cases farmers had good grass land near their farms. The farmers had no obligation to plough up such land and would not do so unless they believed it could be put to better use.

Mr. De la Bere said it was clear that the Government must do much more for agriculture, and they must do it soon.

Mr. W. Roberts said the present system of limiting the subsidy to land which had been down to grass for seven years was very unfair.

Mr. Morgan stated that the amendment was devised to meet difficulties with which county war committees were faced. Anything the Government could do to ease the problem of what land to plough would be a definite contribution to the success of their campaign.

Mr. Boothby said that the arguments in favour of the amendment were overwhelming.

Colonel Colville replied that there were difficulties in accepting the amendment. They were applying the money to the land for which extra help was most needed. It was necessary to give an incentive to farmers to break up land which had been down to grass for seven years. It was the older swards that needed renovation. It would be unwise to encourage the breaking up of the younger pastures that were still in good condition. There would be considerable danger, if the period was reduced from seven years to five, that some farmers would plough land that could more profitably be left as grass for a further year. If the amendment were accepted a chaotic situation would arise. It would be impossible to ask the county executive committees to resurvey the land at this time of year. It would put an impossible burden on the committees and would cause a great deal of controversy among the farmers. He did not believe it would further the end they all had in view—to increase the food production of the country. To make this change in the middle of the ploughing-up season would produce an impossible situation. If any change were to be made it would be better to make it before the new ploughing up. He was prepared to discuss with the Minister of Agriculture the arguments raised in the House in favour of making the change in another season. To make the change now would not be in the interests of the effort which was being made to increase food production.

Mrs. Tate said that she would be perfectly willing to withdraw her amendment if she could have an assurance that some definite date would be given from which the five-year period would qualify for the subsidy, but she would accept no vague promises of consultations with Minister of Agriculture. There had been far too many vague promises.

The amendment was negatived by 182 votes to 149—Government majority 33—and Clause 11 was ordered to stand part of the Bill.

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Credit Facilities for Farmers

On Clause 24 (Expenses of Minister in providing goods and services required for agriculture),

Sir I. Albery moved an amendment that where facilities for providing goods or services for agricultural purposes were given by way of short-term loans the rate of interest should not exceed 1 per cent. over Bank-rate. He said that if, to get bigger production, more capital must be put into the industry further finance must be provided. The Government must make it possible for farmers to spend money for necessary appliances on a far wider scale than had been suggested by Colonel Colville on the second reading. The right hon. Gentleman had then indicated that such credits as might be provided would be on a commercial basis at a rate of 5 per cent. Many members felt that under present conditions the banks could lend money to farmers at a lower rate than they were now getting, and that in some cases 3½ per cent. would be justifiable. (Hear, hear.) The agricultural industry should be given every possible financial facility.

Mr. Colville, Secretary of State for Scotland, said that the whole purpose of this clause was to enable farmers, who were asked to plough up land, to get the necessary requisites and services to carry out the work. The difference between 5 per cent. and 3½ per cent. was not of comparable importance to this clamant need. He, therefore, hoped that the clause would not be limited as proposed in the amendment.

Mr. Spens urged that small farmers, many of whom found it difficult to obtain credit from their banks, should be told quite clearly how much they would be expected to pay under this scheme for the use of the machinery, and in respect of the interest on the capital cost involved.

Miss Lloyd George said that unless farmers could be given more favourable credit terms they would be quite unable to carry out this scheme, and the Government would not get the increased food production which was vitally necessary in the national interest.

Mr. Boothby asked what justification the Government had in charging interest at the rate of 5 per cent. on a Treasury loan. In the circumstances the charge was exorbitant.

Mrs. Tate said that all over the country farmers were losing their capital; the industry, in many instances, was bleeding to death. Credit facilities were already closing in on the farmer. She could not agree to a 5 per cent. interest.

Mr. De la Bere also opposed the 5 per cent. rate of interest.

Mr. Ramsbotham said that the object of the clause was to assist the ploughing campaign. In the great majority of cases, the farmers would provide the seed and the tackle from their own resources or by the accommodation to which they had been accustomed in the past. The Government were empowered by this clause to procure for the small farmer the seed and ploughing tackle needed. What was really important to the farmer was not so much the rate of interest, not an exorbitant rate, as the prices he got and the security he had for the sale of his produce.

After further debate,

The amendment was negatived by 144 votes to 98—Government majority, 46, and the clause was ordered to stand part of the Bill.

The following questions and answers have been recorded in the House of Commons recently:—

Agriculture: War Cabinet Committee

Mr. De la Bere asked the Prime Minister whether he will state the name of the Member of the War Cabinet who presides over the committee which is constantly sitting to deal with questions connected with the Food Ministry on the one hand and the Ministry of Agriculture on the other?

The Prime Minister (Mr. Chamberlain): As my right hon. Friend the Lord Privy Seal (Sir Samuel Hoare) explained in the House on February 8th, he is the chairman of the committee in question.

Mr. De la Bere: Are we to understand that from now onwards the Lord Privy Seal will be 100 per cent. responsible for the agricultural policy of the country. Is my right hon. Friend aware that what is worrying the country is that the Minister of Agriculture has a policy and no power while the Lord Privy Seal has power but no policy?

The Prime Minister: Like many epigrams, that is not true.

Mr. John Morgan: Will the Lord Privy Seal have executive authority and not be a mere co-ordinator?

The Prime Minister: No, Sir.

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Central Slaughterhouses

Major Carver asked the Minister of Food whether he is aware that although centralised slaughtering of cattle may be workable in towns, great difficulties have arisen in rural areas; and whether he is prepared to put forward a scheme which would fit in with existing accommodation in country districts?

Mr. W. S. Morrison: I am not aware that the arrangements for the slaughter in selected slaughterhouses of fat stock for human consumption involve the rural areas in great difficulties. Any alternative scheme which did not involve a considerable reduction in the number of slaughtering points and which applied to rural areas only, would defeat many of the objects of the present scheme, one of which is to ensure the equitable allocation of home-killed meat and imported meat as between different areas.

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Meat Distribution

Colonel Baldwin-Webb asked the Minister of Food whether he is aware that a farmer near Albrighton, who breeds sheep, and has hitherto sold to the local butcher who slaughters and distributes, now has to send his animals eight miles to Shifnal to be graded, and from there has to forward them 16 miles to Wolverhampton to be slaughtered; that the meat has then to come back to Shifnal 16 miles more to be redistributed; and whether he is considering improving these methods of distribution?

Mr. W. S. Morrison: I am aware that a farmer at Albrighton who has fat sheep for sale for slaughter has to send them to his nearest collecting centre, which is Shifnal, to be graded for sale there to the Government. Collecting centres have been set up at practically all the fat stock markets in the country, and I do not think there can be any hardship in requiring a farmer to send his fat stock to his nearest market for sale to the Government.

The suggestion that the farmer has to forward the stock from the collecting centre at Shifnal to Wolverhampton for slaughter is not correct. After purchase by the Government at the collecting centre, the farmer has no further responsibilities regarding the stock, which under instructions from my officers is despatched to slaughterhouses according to the needs of the several areas into which the country is divided for the purposes of control. Fat stock purchased at Shifnal are not necessarily sent to Wolverhampton for slaughter.

The butchers at Shifnal are supplied with meat from the wholesale depot at Wolverhampton. The working of the scheme in detail is being closely watched with a view to effecting such improvements as experience may prove to be desirable.

Animal Feeding Stuffs

Mr. Price asked the Minister of Agriculture on what grounds he has decided to give preference in feeding stuff supplies to cattle and sheep before pigs and poultry; whether the decision is connected with the greater economy in consumption of imported feeding stuffs in the case of the former over the latter; and if he can give any figures in support of the case?

Mr. Ramsbotham: The grounds on which the Government decided to give preference in feeding stuffs supplies to cattle and sheep before pigs and poultry were set out in the announcement made by my right hon. Friends the Minister of Agriculture and the Secretary of State for Scotland on November 22nd, a copy of which I am sending to the hon. Member. He will observe that the consideration to which he refers in the Question is not among the main factors on which the Government's decision was based. The last part of the Question does not, therefore, arise.

Mr. De la Bere asked the Minister of Agriculture whether, as farmers cannot obtain even 20 per cent. of their requirements of straight-run feeding stuffs based on their consumption figures for last year, although supplies of compound cubes and so-called mixed meals are available, he will confer with the Minister of Food and the chairman of the Animal Feeding Stuffs Board, with a view to ensuring that the allocations in respect of feeding stuffs are made contingent on the merchants and distributors handing on a substantial percentage of these allocations as straight-run feeding stuffs to farmers?

Mr. Ramsbotham: The supply of straight-run feeding stuffs to farmers has already been the subject of discussion between the Ministry of Agriculture and the Ministry of Food and it has recently been decided to issue a further circular to the feeding stuffs trade with the object of ensuring amongst other things that an adequate proportion of the available supplies are released to farmers in the straight-run form.

Mr. De la Bere: Is my right hon. Friend aware that in connection with the processing of wheat at the port mills which provide feeding offals from the wheat for pigs and poultry, the allocation goes entirely to the large milling combines, and that the present system of distribution is grossly inequitable and wholly unsatisfactory?

Mr. Ramsbotham: I am not aware of that.

Mr. De la Bere asked the Minister of Agriculture whether, in connection with the larger increase in the numbers of livestock now coming forward to the market, he will confer with the Minister of Food and the chairman of the Animal Feeding Stuffs Board with a view to issuing some statement as to the relations of these increases to the shortage of animal feeding stuffs, in view of the reports which are being issued from a large number of agricultural areas of an increased number of animals being slaughtered for lack of feed?

Mr. Ramsbotham: The increase in the number of animals coming forward for sale for slaughter is due to marketings in more normal proportions following upon the short supply in recent weeks consequent upon the severe weather and the adjustment in marketing arrangements necessitated by the introduction of Government purchase of fat stock. The second part of the Question does not, therefore, arise.

Mr. De la Bere: Is my right hon. Friend aware that the bulk of these animals are sent under *force majeure* for lack of feeding stuffs? Will he tell the House by what right the Minister has fixed the prices for these livestock under the cost of production? The whole thing is absolutely unjustifiable.

Mr. Ramsbotham: My information is that not much of the premature marketing is on account of lack of feeding stuffs.

Mr. De la Bere: Perhaps my right hon. Friend will have a word with me on the matter.

Mr. Salt asked the Minister of Food whether he is aware that large quantities of store pigs are finding their way to the markets and slaughterhouses, due to the belief of the farming community that no food supplies are

going to be available for feeding, or if such feeding supplies are available that they will be inadequate for their holdings; and whether he will take immediate steps to remedy this?

Mr. W. S. Morrison: I am aware that in certain cases owing to the shortage or unequal distribution of feeding stuffs supplies some premature slaughtering of pigs has occurred. Steps are being taken to improve the distribution of feeding stuffs, and my hon. Friend will be aware that larger supplies have been available since the end of 1939. Farmers have, however, been advised to plan their production programmes on the assumption that the supply of imported feeding stuffs available to pig producers will be reduced by at least one-third as compared with the normal pre-war quantities.

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Pig Clubs

Mr. John Morgan asked the Minister of Food what objections he has to the formation of pig clubs at the present time; and what facilities he can offer to existing pig clubs for that proportion of feeding stuffs necessary to complete the ration where household waste forms the bulk of the feed?

Mr. W. S. Morrison: The formation of pig clubs is to be encouraged and I am considering with my right hon. Friend the Minister of Agriculture and Fisheries, the steps that will be necessary to provide feeding stuffs for the pig clubs that he hopes to see established in the near future under the auspices of the Small Pig Keepers' Council.

Mr. Morgan: Is it not a fact that a suggestion was put out that these clubs should not start until April because the Minister was not prepared to find the proportion of food necessary, and does it not seem false reasoning to deter local authorities who are finding 75 per cent. of the pig food while the Minister is finding 100 per cent. for farmers?

Mr. Morrison: If any such suggestion was made it did not emanate from me. I have seen a statement in a newspaper, mentioning the hon. Member's name, that we were not assisting municipal authorities such as Tottenham. But in fact I have had a letter of thanks from the Borough Council of Tottenham for the assistance we have given in the matter of the supply of pig food.

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Milk Production

Mr. David Adams asked the Minister of Agriculture whether milk production is now being fully maintained; what is happening to the milk that would normally, but for evacuation, have been supplied to schoolchildren; and whether immediate steps are being taken, in conjunction with the Board of Education, to recommence the distribution of milk to schoolchildren, especially in depressed areas, whether schools are open or not?

Mr. Grimston: Particulars of milk production during January are not yet available, but up to the end of December production was well maintained. There has been some reduction in the demand for milk under the milk-in-schools scheme and milk not so required has been used for manufacturing purposes. As regards the last part of the Question, I understand that attention has been called by the Board of Education to the importance of resuming arrangements for the supply of milk to schoolchildren in all areas where such arrangements have been interrupted, and that the board have indicated that it should be practicable to provide milk for children not in attendance at schools, subject to certain safeguards.

Mr. Adams: When does the hon. Member anticipate that the full service will be continued?

Mr. Grimston: I am not in a position to answer that Question.

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Uncultivated Land

Mr. Tinker asked the Minister of Agriculture whether he will state, for each administrative agricultural area, the number of acres of land that, during the last five years, have gone out of cultivation; and what steps he intends to take either to enforce the owners to cultivate or for the State to take it over?

Mr. Grimston (Vice-Chamberlain of the Household): I have been asked to reply. While it would be possible to compile a detailed table showing the estimated amount of arable and grassland that has become rough grazings in each county, it is doubtful whether these figures by themselves would be of much value as a guide to the action which should be taken in individual cases. County War Agricultural Executive Committees have been given powers conferred on my right hon. Friend by the Defence (General) Regulations, 1939, to issue directions with regard to the cultivation, use and management of agricultural land, and with his consent to take possession of land, if necessary, with a view to its cultivation, and these powers should be exercised by reference to all the local circumstances involved rather than by reference to a purely statistical analysis.

Mr. Tinker: If these committees do not take advantage of these powers can we get into touch with the Minister of Agriculture and draw his attention to the wastage of land?

Mr. Grimston: I think these powers have been used, but may I suggest to the hon. Member that if he has any misgivings on the matter he will communicate with the Minister of Agriculture.

Mr. John Morgan: Has the hon. Member any approximate figure of the acreage involved? Is it not a very substantial amount of land?

Mr. Grimston: The taking possession of land has been authorised in 47 instances covering nearly 6,000 acres.

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Destructon of Vermin

Mr. Leslie asked the Minister of Agriculture whether, in view of the bad effects of the increasing destruction of poultry by foxes in many rural areas, he will advise farmers, smallholders and poultry keepers to destroy these vermin by shooting or any other satisfactory method, and so preserve essential food from being wasted?

Mr. Ramsbotham: My right hon. Friend has been in close touch with the Masters of Foxhounds Association on the subject to which the hon. Member refers. He understands that the association, with a view to protecting the interests of the poultry industry, has taken special measures so as to reduce the fox population by hunting or in other ways in order to prevent damage. The position has been kept constantly under review and my right hon. Friend is continuing to watch it closely.

Mr. Leslie: Is the Minister aware that many poultry keepers in the county of Durham do not put out their poultry until late in the forenoon because of the depredations of foxes? Why consult the hunting people? Why not consult the poultry keepers and the smallholders; and deal with foxes as you would with any other pest—destroy them?

Mr. Ramsbotham: I have already told the hon. Member that special measures are being taken.

Mr. Leslie: What special measures?

Mr. Ramsbotham: Measures other than hunting.

Mr. J. Morgan: Why not give to poultry keepers the oats which now go to the horses of hunters?

Sir Archibald Sinclair: Does the reply mean that every possible measure is being taken to keep down foxes which destroy poultry?

Mr. Ramsbotham: That is what it means.

Lieut.-Colonel Heneage: Is it not a fact that foxes are the greatest enemy of rats and mice?

Mr. J. Morgan: Cats.

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Fox and Stag-Hunting

Mr. Leach asked the Minister of Agriculture if he is aware that fox and stag-hunting damages agriculture, handicaps the food supply, discourages the allotment industry, takes away fit men and women from productive

work, and so is detrimental to the national interests; and will he take steps to procure its prohibition?

Mr. RAMSBOTHAM: Careful consideration has been given to the effects of hunting upon the national economy in war-time, but my right hon. Friend, as at present advised, sees no sufficient reason for adopting the hon. Member's suggestion.

Mr. LEACH: Am I to take it that the right hon. Gentleman is somewhat indifferent about the food supply?

Mr. RAMSBOTHAM: I suppose the hon. Gentleman refers to damage done by foxes to poultry, and I would point out that it is the foxes that do the damage and not the hunting.

Mr. JOHN MORGAN: Will the Department of Agriculture find any objection if farmers take this matter in hand themselves and destroy the foxes?

Mr. RAMSBOTHAM: I gather that the Master of Foxhounds Association is fully alive to the importance of damage to poultry, and measures have in fact been taken with a view to reducing the fox population well below the normal.

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AGRICULTURAL SHOWS

MAJOR CARVER asked the Minister of Agriculture whether he will state the policy of his Department in respect of the holding of agricultural and similar shows in this country during the period of the war?

Sir R. DORMAN-SMITH: The Ministry is not encouraging the holding of agricultural and similar shows during the period of the war. This policy is supported generally by the show societies, and I understand that practically all the larger and most of the county and district agricultural shows have already been abandoned for this year. I should like to take this opportunity of suggesting that in the event of a society still wishing to hold a show, the chief officer of police should be consulted as to the requirements of the Public Entertainments (Restriction) Orders.

SOCIETY'S GRANT FOR SUFFOLK STALLIONS

The Council of the Suffolk Horse Society has decided to give a grant of £20 in respect of each Suffolk stallion travelled by a heavy horse society. This action was taken on a recommendation from the Finance Committee, who considered that, in view of the Ministry of Agriculture's action in withdrawing the grants to heavy horse societies, it was extremely likely that several societies would have to close down. The grants will involve an expenditure of £420.

During discussion on a resolution requesting the Minister to renew the grants in time for this season's activities, it was emphasised that the good results in raising the standard of heavy horses bred in this country, had been achieved by placing at the disposal of breeders generally the use of first-class sires. Under the rules governing the grants to the societies, they were enjoined not to accumulate funds, but to spend them in hiring the best horses and reducing service fees. As a result the societies had hardly sufficient funds to carry on for another year.

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Farmers in the north-west corner of the West Riding of Yorkshire, and a number over the county boundary in Westmorland, have been told by the Ministry of Agriculture that in view of the severity of the weather, it would not be safe to double-dip sheep this spring, owing to the possible effect on lambing ewes. Veterinary inspectors of the Ministry began flock inspections on February 12th, and those flocks given the "all clear" will not require to be double-dipped. Last year, however, there was a very serious outbreak of sheep scab, and there is still a Movement Order in force over a wide area.

NOTES AND NEWS

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

Feb. 24th.—Annual Meeting of the Scottish Metropolitan Division, N.V.M.A., at Edinburgh, 11 a.m.
Feb. 26th.—Meeting of the Editorial Committee, N.V.M.A., at 36, Gordon Square, W.C.1, 4 p.m.
Feb. 28th.—Annual General Meeting of the Lancashire Division, N.V.M.A., at Manchester, 2.30 p.m.
Feb. 29th.—Voting Papers issued to overseas members (R.C.V.S. Council Election).
Mar. 1st.—Meeting of the South Wales Division, N.V.M.A., at Carmarthen, 2.30 p.m.
Mar. 15th.—Annual General Meeting of the Mid-West Division, N.V.M.A., at Bristol, 2.30 p.m.
Mar. 18th.—R.C.V.S. Examinations at Reading.
April 1st.—R.C.V.S. Annual Fees due.
May 9th.—Last date for nominations, R.C.V.S. Council Election.
May 14th.—Provisional date for commencement of R.C.V.S. Animal Management Examination.
May 23rd.—Issue of R.C.V.S. Annual Report and Voting Papers.
May 30th.—Last date for receipt of R.C.V.S. Council Election Voting Papers.
June 6th.—**R.C.V.S. Annual General Meeting.** Victoria Veterinary Benevolent Fund Annual General Meeting.
June 27th.—R.C.V.S. Written Examinations begin.
July 3rd.—Provisional date for commencement of R.C.V.S. Oral and Practical Examinations.

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National A.R.P. Animals Committee

LECTURES AT THE ROYAL VETERINARY COLLEGE

The subject of next week's lecture (on Tuesday, at 2.30 p.m.) in the series being given by Mr. H. E. Bywater, M.R.C.V.S., in the Beaumont Lecture Theatre at the Royal Veterinary College, will be "Restraint of Animals and First Aid Treatment of Injuries Produced by High Explosive Incendiary Bombs."

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PERSONAL

Marriage.—CHALMERS—CONNOCHIE. On February 14th, at Mertoun Parish Church, St. Boswells, by the Rev. A. W. Macnair, Ian H. Chalmers, M.R.C.V.S., to Helen L. Connochie, St. Boswells.

The bride's father is a member of a well-known family of Border veterinary surgeons, and on his recent retirement was succeeded in the business by the bridegroom, who was formerly a partner.

Mr. Chalmers, who is the eldest son of Mr. and Mrs. W. H. Chalmers, 39, Dudley Crescent, Leith, was attended by Mr. T. Dunbar, M.R.C.V.S., Edinburgh. The bride, who is well known in Border tennis circles, was given away by her brother-in-law, Mr. J. Y. White, who is on the staff of Heriot-Watt College. The bridesmaids were Miss Katherine Connochie (sister) and Miss Eileen White (niece).

A reception was held in the Dryburgh Abbey Hotel.

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R.C.V.S. OBITUARY

BARR, John, Ivy House, Acle, near Norwich. Graduated Edinburgh, December 19th, 1885. Died February 10th, 1940.

Mr. John Barr, who was a member of a well-known Kirkcudbrightshire family, had an extensive practice for over 40 years. *The Norfolkshire News* says of him: "He was held in great esteem by farmers and their workers in the neighbourhood," and adds: "Always ready with his services, when called upon during the wintry

weather of last month he carried on his work undaunted by bitter winds or snow, and it seems that during this period he contracted the illness from which he died."

EDIE, Harry, Capt. late R.A.V.C. (T.F.), St. Andrew's Lodge, Brunswick Place, Southampton. Graduated London, March 28th, 1896. Died February 9th, 1940; aged 65 years.

Captain Edie, prior to his retirement, was known throughout the South of England, where he had a very extensive practice. He was also one of the most well-known and popular members of the Royal Southampton Yacht Club. Captain Edie served throughout the last war in the Royal Army Veterinary Corps.

ROBERTS, Arthur Mason, 108a, Finchley Road, London, N.W.3. "Existing Practitioner." Died February 14th, 1940, aged 84 years.

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LEGAL NOTES

Dog alleged to be a "Potential Menace."—A dog, described by a veterinary surgeon as "a potential menace" not only to other animals but to human beings, featured in a case at Southend County Police Court, when Kenneth Pound, insurance agent, Lynton Road, Hadleigh, was fined £5 and ordered to pay three guineas costs on a summons for causing unnecessary suffering to the dog by omitting to provide it with proper care and attention. He was also disqualified from holding a dog licence in future.

Inspector Stephens, of the R.S.P.C.A., said on January 19th P.C. Tredgett saw the dog, an Afghan hound, straying in Church Road. It was in a deplorable condition; there was practically no hair on its body and that on its legs was matted together. There were raw patches all over the body and it was in a suffering state. The constable tried to capture the animal, but was unable to do so. He saw it again the next day and traced the owner.

"This animal was in an appalling state of neglect and extremely thin," the Inspector added. "It was literally covered with sarcoptic mange and eczema, and it was obvious it had received no treatment. On the advice of the veterinary surgeon it was destroyed. Defendant stated that he had had the animal since just before Christmas and that he had bought a bottle of lotion with which to treat it for eczema. It was, in fact, suffering from a most contagious disease, which can not only be transmitted to other animals but to human beings.

Mr. A. S. Watson, M.R.C.V.S., described the dog as "a potential menace not only to dogs in the neighbourhood but to any people with sensitive skins or children who might have handled it."

Questioned by defendant, Mr. Watson said the animal might have had the disease before he became its owner.

Defendant, in evidence, said he had the dog in place of another (supplied by the same breeder) which had to be destroyed. The breeder told him that it had eczema and, if treated with the lotion, would recover. He treated the animal and at first it became worse and then, after about three weeks, appeared to get better. The improvement was not maintained and he wrote to the breeder saying that either he would return the dog or would have it destroyed. He was awaiting a reply when the inspector called.

* * * * *

AGRICULTURE "AS VITAL AS MUNITIONS"

In a recent issue of its *News Service Bulletin* the Ministry of Agriculture observes: "Farmers need have no doubt as to the attitude of the War Cabinet towards their industry to-day since the remarks of the Lord Privy Seal (Sir Samuel Hoare) on the second reading of the Agriculture (Miscellaneous War Provisions) Bill. They have even greater point since the disclosure that a Committee to co-relate all aspects of our food supplies has been set up with Sir Samuel Hoare as Chairman. 'The Government,' he said, 'put this home production of food into the very first priorities of war needs. We intend to make the home-production programme as urgent and as vital as any of the munitions or export trade programmes. . . . I have risen for one purpose alone—to show the interest of the Cabinet in this all important question and to assure the House that we are determined greatly to increase the home production of food and fodder.'

"These assurances have been backed by deeds. The farmer now has a guaranteed market for practically everything that he produces and a guaranteed price. In cases such as wheat, where the price for a future crop has not been guaranteed it is only because a price that is fair to-day might be quite useless to a producer under conditions that may prevail six months hence. The assurance has been given that the Government will keep production costs under continuous review and if these show an appreciable rise in the case of an individual commodity, the price will be revised to keep step with the costs.

"Two days after the Lord Privy Seal spoke the Chancellor of the Exchequer and the Minister of Food informed Parliament of steps being taken in the interests of farmers in the present situation. They explained how the producer was entitled to a higher price because of the higher costs of war-time and related how the Exchequer was bearing much of the cost of this in order that the price of food to the consumer should not be raised unduly. In the case of milk, the help given to dairy farmers in meeting the higher costs is at the rate of £1,000,000 a month, while the scale of prices at which the Government now buy meat gives the home meat producers an additional £1,280,000 a month, over and above the £5,000,000 a year subsidy formerly paid."

* * * * *

CENSORING OF SCIENTIFIC JOURNALS

At the request of Sir Walter Monckton, Director-General of the Press and Censorship Bureau, Sir William Bragg, as President of the Royal Society, has undertaken the formation of a scientific panel to assist the bureau in arranging the censorship of papers in scientific journals. The following have agreed to serve on the panel:—

Professor C. R. Harington (biochemistry), Professor V. H. Blackman (botany and agriculture), Professor A. C. Egerton (chemistry), Dr. H. L. Guy (engineering sciences), Professor P. G. H. Boswell (geology), Professor S. Chapman (mathematics), Dr. C. H. Desch (metallurgy), Dr. C. G. Darwin (physics), Professor A. V. Hill (physiology), Professor F. C. Bartlett (psychology), Professor W. W. C. Topley (bacteriology and pathology), Professor M. Greenwood (statistics), Sir Guy Marshall (zoology).

* * * * *

FISH LIVER OILS FOR POULTRY

In a note published in the *Farming News*, it is stated that cod liver oil, pilchard oil or "Pilchardene" are of equal feeding value for poultry, if when biologically tested they have shown that they contain a similar potency. In fact the pilchard product is usually slightly cheaper and tests at the Dominion Experimental Station at Scott, Sask., have indicated the value to be equal to commercial cod liver oil, states E. Van Nice, Assistant in Livestock.

It is possible to adulterate these oils and for this reason the purchaser should make sure that he is buying from a reliable firm and that the oil is of a well-known, tested brand.

During the winter months, when laying birds are best confined to the house, the oil not only supplies the valuable vitamin "D" which is obtained from long days of direct sunlight in summer, but the presence of this vitamin makes possible a more complete assimilation of lime and phosphorus. It has become a common practice among many poultrymen to include in the winter feeds from one to two per cent. of one of these oils in the dry laying mash. An effective method of getting the oil evenly distributed through the mash is to stir slowly into a small quantity of mash or if bran is used in the mash,

a portion may well be used to take up the oil; then it is easily mixed evenly through the mash.

The trials at the Dominion Experimental Station at Scott not only resulted in an increase in egg production but the hatchability was also increased, with leg-weakness in the chicks practically eliminated. However, as a safeguard against leg-weakness and to stimulate growth, two per cent. of the oil is recommended in the mash for the chicks until they are old enough to go out on the summer range.

If range is not available for the young chicks in summer, the oil should be continued as long as they are confined and the same may be said for laying stock confined to small houses or small quarters.

[As readers will have noted, there is a supply of a "standard" cod liver oil now available, in which various other fish liver oils may be added from time to time.—*Editor, V.R.*]

* * * * *

"THE CONTROL OF BLACKHEAD IN TURKEYS"

Mr. K. D. Downham writes: "*Re* the article upon 'The Control of Blackhead in Turkeys' in the issue of February 17th, I regret that specific mention was not made of the valuable help in the work which was given by Dr. F. L. Pyman, Head of Research Department, Mr. J. S. Woollam, Head of the Agricultural and Veterinary Department, and Mr. W. A. Broom, Head of the Pharmacological Department of Messrs. Boots Pure Drug Company. I am very much indebted to these gentlemen for their co-operation in this matter."

* * * * *

A SUBSTITUTE DERBY

The Stewards of the Jockey Club have decided that a substitute Derby and a substitute Oaks shall be run on June 12th and 13th respectively at Newbury. If the Newbury course should not be available the substitute races will be run over the Suffolk Stakes course at Newmarket. If the Rowley Mile course at Newmarket is not available substitute races for the Two Thousand Guineas and the One Thousand Guineas will be run over the Bunbury Mile at Newmarket.

* * * * *

ARMY VETERINARY SERVICE

London Gazette—War Office—Regular Army

February 16th.—Maj. C. U. K. Porter is placed on the H.P. list on account of ill-health (February 9th).

* * * * *

On Wednesday of last week, Tucker and Sons, Bath, forage merchants, having no supplies to sell, closed their doors for the first time for a century, and sent a telegram of protest to the Minister of Agriculture.

* * * * *

FAMOUS ARABIAN STUDS DESTROYED

At a council meeting of the Arab Horse Society in London Brigadier-General W. H. Anderson, the Secretary, reported that the Arabian Horse Club of America had unanimously adopted a motion to accept horses from the society's stud book without reservation.

A letter from the President, Mr. R. S. Summerways, stated that unfortunately owing to the war the outward and visible activities of the society had necessarily been curtailed, and the Arabian Horse Show held annually in conjunction with the National Pony Society's Show at the Agricultural Hall, Islington, would not take place this year; nor would any of the principal shows be held at which classes for Arabian horses were usually included.

Brigadier-General Anderson said he feared that the ruthless invasion of Poland had involved the dispersal and destruction of many famous Arabian studs in that country, which was a grievous misfortune for the owners and also for the Arabian breed in Europe. Included among these were the studs of two members of the Arab Horse Society—Count Joseph Potocki and H.H. Prince Roman Sanguszko.

CORRESPONDENCE

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

The views expressed in letters addressed to the Editor represent the personal view of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

* * * * *

TUBERCULIN TESTING

To the Editor of the Veterinary Record

Sir,—The unfortunate experience of Mr. G. S. Muir which he records in your issue of February 10th induces me to relate a very disconcerting experience which I had some time ago, and which certainly has shaken my faith as to the efficiency of tuberculin testing.

I carried out a test on a large herd of cows numbering 110 head, adopting the double intradermal and using R.V.C. tuberculin. This herd had never previously been tested and 65 per cent. of them reacted. At the same time milk sampling was carried out and it was found that one of the herd was giving tuberculous milk; the usual procedure was carried out and finally traced to one cow *which had failed to react to the tuberculin test.* It was decided to repeat both tests after three weeks; the result was the same—no reaction to the tuberculin and positive to the milk test. The cow was eventually slaughtered, and at the *post-mortem* examination held there were present two Ministry veterinary officers and myself. Lesions were found in the udder and supramammary glands, but no lesions could be traced in any part anterior to the diaphragm.

I am,
Yours truly,
C. W. Abrams, M.R.C.V.S.

56, High Street,
Wanstead, E.11.
February 13th, 1940.

* * * * *

BACTERIOLOGICAL EXAMINATION OF MEAT

To the Editor of the Veterinary Record

Sir,—I have been shown a copy of the memorandum to the Ministry of Food prepared by the N.V.M.A. and note that there is no mention of a very important point—the application of bacteriological meat examination to all doubtful cases and to cases of emergency slaughtering.

In countries with well regulated meat-inspection, the bacteriological examination of meat has become a most important scientific factor in the consideration of all doubtful cases and by means of this it is possible to differentiate between sound and unsound meat and avoid undue wastage of foodstuffs.

This examination is carried out for the detection of Salmonella (a member of the food-poisoning group), and to determine the non-specific bacterial count in carcases in order that the degree to which the suspected meat can be preserved may be assessed.

Although in some respects the list of conditions for which total condemnation is advised in this country appears large compared with that of other countries, and this fact in itself guarantees some degree of protection of the public health from meat poisoning, this guarantee is by no means complete as the organisms responsible for poisoning tend to occur as secondary invaders in various other conditions not foreseen by the regulations.

As the various recent investigations have shown—the Salmonellae responsible for food-poisoning (*S. typhi murium, S. enteritidis* and their various types, also to some degree *S. suipestifer* and *S. paratyphi B*) are widespread in nature and are not confined to any special species; moreover, as shown by statistics, this country is not free from them. They are often found inhabiting the intestines of healthy bovines. They are able under various conditions which lower the tissue-vitality or alter the *p*H-concentration of the intestinal contents, to multiply extensively and penetrate into the whole system. This matter is one of great importance to the meat examiner, as these organisms, with few exceptions, do not provoke typical lesions which either in clinical cases or on *post-mortem* examination, could be identified without special bacteriological examination. Practical experience together with the statistics of the large meat poisoning "epidemics" in several countries reveals that in the vast majority of cases such poisonings were nearly always connected with the emergency slaughter of animals in which the organisms responsible for poisoning have been found as secondary invaders in various internal obstetrical or surgical conditions which could not be specified in the regulations and could not be detected except on bacteriological examination.

Not less important is the correct assessment of the degree of infection with non-specific bacteria, as practice has shown that such meat, although not directly dangerous, is liable to decomposition and in some susceptible persons may provoke unpleasant complications.

In addition to its use in the cases mentioned, the bacteriological examination of meat may be of great value in the recognition of early or atypical cases of the notifiable diseases.

It is my deep conviction, following upon years of continental experience, that the introduction of such bacteriological examination to this country would not only be beneficial to public health but would enable the meat examiner to differentiate more clearly between healthy and unhealthy meat and save for consumption many carcases that otherwise would be destroyed.

I am, Sir,
Your obedient servant,
ALEXANDER MOLDAWSKY,
M.D. (BRSL.), V.M.D. (BERL.), M.R.C.V.S.

25, Mornington Crescent,
London, N.W.1.
February 14th, 1940.

* * * * *

ANTHRAX IN SWINE

TO THE EDITOR OF THE VETERINARY RECORD

Sir,—There are one or two points arising from your publication of my article on the above subject (Vol. 51, pp. 1489-1492) which I wish to clear up.

It may not have been clear that although the cases described were met during the course of my private practice they were—as required by the Order—promptly reported as cases of suspected anthrax. In each, suitable specimens were sent to the Veterinary Laboratory of the Ministry of Agriculture and the suspicion confirmed.

The figures did not reproduce as well as one would have desired. The definition in Figure 1 was poor and may have given a false impression, particularly since no evidence of the capsular material which was present can be seen in the figures. Moreover, instead of the short stout square-ended bacilli occurring in the chains so typical, with sharp definition, of the anthrax smear, the reproduction almost suggested the long relatively thin "secondary invaders" not uncommonly seen in smears from the glands of animals dead some time. The caption should have read "Note the great length and size of the bacillary *chains*."

Yours sincerely,
J. E. SAUNDERS.

1, Rothsay Place,
Bedford.

DISEASES OF ANIMALS ACTS, 1894 TO 1937, AND AGRICULTURE ACT OF 1937 (PART IV)

SUMMARY OF RETURNS

Period.	Anthrax.		Foot-and-Mouth Disease.		Parasitic§ Mange.		Sheep Scab.	Swine Fever.	
	Outbreaks confirmed.	Animals attacked.	Outbreaks confirmed.	Animals slaughtered as diseased or exposed to infection.	Outbreaks confirmed.	Animals attacked.	Outbreaks confirmed.	Outbreaks confirmed.	Swine slaughtered.
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Period 16th to 31st Jan., 1940	34	42	1	66	1	3	13	152	64
Corresponding period in ...									
1939	55	58	11	1,635	7	12	61	64	45
1938	38	40	43	5,341	10	10	22	22	12
1937	29	32	1	119	14	24	14	54	46
Total 1st January to 31st Jan., 1940	55	64	5	624	5	9	36	342	146
Corresponding period in									
1939	92	97	22	3,531	8	13	83	106	72
1938	89	91	75	9,981	16	20	52	38	23
1937	58	65	2	178	22	32	50	103	63

NOTE.—The figures for the current year are approximate only. § Excluding outbreaks in Army Horses.

Tuberculosis (Attested Herds) Schemes

The number of Attested Herds, *i.e.* herds officially certified as free from tuberculosis, as at 31st January, 1940, was as follows:— ENGLAND 3,455 ... WALES 8,409 ... SCOTLAND 2,705 ... TOTAL (GREAT BRITAIN) 14,569

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'Nema' Worm Capsules

(P., D. & Co.)

TETRACHLORETHYLENE is an effective anthelmintic for the removal of roundworms from dogs and silver foxes, roundworms from pigs and poultry, and stomach worms from sheep and goats. Practical trial has shown that a single administration in proper dosage will remove from 95 to 100 per cent of these intestinal parasites.

"Nema" Worm Capsules (P., D. & Co.) contain chemically pure tetrachlorethylene, and are tinted with a harmless dye to render them distinctive. The capsules are supplied in various sizes, to enable the dose to be graded according to the weight of the animal treated, as follows:—

Capsules No. 188 contain 0·2 c.c. and are suitable for puppies, toy dogs, cats and fox-cubs. No. 191 contain 0·5 c.c. and are suitable for small pigs, half-grown silver foxes, young chickens and young turkeys. No. 187 contain 1 c.c. and are suitable for small pigs, small dogs and adult fowls. No. 189 contain 2·5 c.c. and are suitable for pigs and lambs of 50 lb. weight, and medium-sized dogs. No. 190 contain 5 c.c. and are suitable for pigs and sheep over 150 lbs. weight, for large-sized dogs and also for horses and mules.

Full particulars will be furnished on request.

PARKE, DAVIS & CO., 50 BEAK ST., LONDON, W.1

Laboratories: Hounslow, Middlesex. Inc. U.S.A., Liability Ltd.

Factors in Canine Nutrition

[No. 9]

Vitamin D

Vitamin D is now believed to be solely concerned with the absorption of calcium and phosphorus from the intestinal walls, and the deposition of calcium phosphate in the bone structures. As in nature it frequently occurs in conjunction with vitamin A, it was not properly distinguished from that vitamin in the earlier researches, and this led to a confusion between the two which is still apparent in the minds of the public. Rich natural sources of vitamin D are mammalian and fish livers, but it has no precursor in the vegetable kingdom; supplies are formed in most animals, including dogs, by the action of sunlight on ergosterol in the skin. Long-haired and white-haired dogs have less opportunity of availing themselves of this source.

What Admin Contains

ADMIN contains a minimum per pound of 15,625 international units of vitamin A; 3,906 international units of vitamin D; 2,510 international units of vitamin B.1; and proportional amounts of the rest of the vitamin B complex and vitamin E, which have as yet no international standard. It supplies assimilable calcium, phosphorus, iron, copper, manganese, and iodine in the optimum quantities and proportions.

PACKETS 6d. and 1/6 (about ¼-lb. and 1-lb. respectively) are sold to the genera. public through chemists and corn chandlers. The 7/6 tin (containing about 7 lb.) is supplied to members of the veterinary profession at the special price of 5/6. Orders of 3 tins and over are sent carriage free.

ADMIN FORTIFIES FOOD

Issued by COOPER McDOUGALL & ROBERTSON LTD, BERKHAMSTED, HERTS